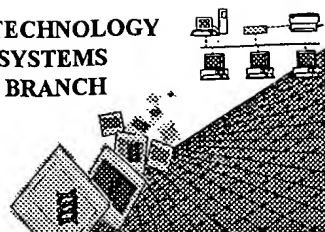# RAW SEQUENCE LISTING ERROR REPORT

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RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003
TIME: 11:22:24

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Output Set: N:\CRF4\03202003\I892635.raw

*Does Not Comply
Corrected Diskette Needed
errors throughout*

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 3 <110> APPLICANT: MAY, Gregory D.
 4        CLENDENNEN, Stephanie K.
 5        MASON, Hugh S.
 6        GOMEZ LIM, Miguel A.
 7        ARNTZEN, Charles J.
 9 <120> TITLE OF INVENTION: DNA Regulatory Elements Associated with Fruit Development
11 <130> FILE REFERENCE: 031998-007
13 <140> CURRENT APPLICATION NUMBER: US/09/892,635
14 <141> CURRENT FILING DATE: 2001-06-28
16 <150> PRIOR APPLICATION NUMBER: US 09/160,351
17 <151> PRIOR FILING DATE: 1998-09-25
19 <150> PRIOR APPLICATION NUMBER: US 60/060,062
20 <151> PRIOR FILING DATE: 1997-09-25
22 <160> NUMBER OF SEQ ID NOS: 45
24 <170> SOFTWARE: PatentIn version 2.0
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*Per Sequence Rules,
only one file
is to be
submitted
on disk*

pp 1-7

ERRORED SEQUENCES

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2170
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E--> 2179 Xaa Lys Leu Asn Val Trp Gly Leu Ala Gly Gly Xaa Ala Thr Arg Pro
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E--> 2182 Met Val Arg Thr Pro Trp Val Thr Ala Ser Ser Xaa Asn Lys Thr Leu
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E--> 2185 Ile Gly Xaa Leu Arg Pro Xaa Ser Xaa Trp Pro Cys Ala Ala Ala Lys
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E--> 2188 Asn Thr Thr Ala Glu Ala Xaa Pro Asn Phe Xaa Val Ser Xaa Ile Leu
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E--> 2191 Thr Val Xaa Arg Arg Asp Arg Val His Asn Asp Ala Xaa Ser Asn Ala
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E--> 2194 Thr Ile Arg Cys Val Xaa Arg Ala Ala Xaa Thr Xaa Thr Gly Arg Pro
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E--> 2197 Gly Glu Pro Ser Val Xaa Thr Xaa Ser Thr Thr Gln Thr Trp Trp Pro
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E--> 2200 Xaa Thr Arg Pro Ser Xaa Ser Arg Arg Xaa Cys Gly Phe Gly Leu Xaa
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     2223             420                     425                  430
     2225 Ser Met Arg Asn Lys Arg Tyr Tyr Asp Ser Asp Ser Val Ser Leu Lys
     2226         435                     440                  445
E--> 2228 Leu Arg Arg Lys Ser Ser Ile Lys Ala Xaa Leu His Thr Trp Pro Thr
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     2231 Thr Ile Val Asp Arg Asp His Met His Pro Ser Asn Val Leu Lys Cys
     2232 465                     470                  475              480
     2234 Leu Gly Val Ser Lys Cys Val Phe Asp Arg Asn Glu Asp Val Arg Ile
     2235             485                     490                  495
     2237 Asn Lys Ile Asn Tyr Phe Phe Ile Ile Ile Asn Ile Leu Ile Tyr Phe
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        2246 Tyr Lys Tyr Phe Leu Tyr Gly Leu Gly Tyr Leu Asp Leu Leu Ile Lys
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        2250             565             570             575
        2252 Val Ile Met Arg Ser Arg Thr Leu Arg Ser Asp Arg Gly Glu Lys Gly
        2253             580             585             590
        2255 Asn Tyr Val Asn His Gly Lys Phe Arg Phe Val Cys Thr Val Glu Met
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        2258 Val Thr Val Asp Thr His Pro Gln Pro Ala Cys Asn Asn His Val Val
        2259         610             615             620
        2261 Ile Cys Leu Val Ser Tyr Leu Met Thr Met Asn His Ile Val Phe Thr
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E--> 2264 Asn Ile Asn Ala Ser Leu Ala Ser Gln Phe Cys Thr Phe Val Pro Xaa
        2265             645             650             655
        2267 Leu Lys Cys Ser Tyr Gly Leu Thr His Pro Glu Cys Met Val Ser Arg
        2268             660             665             670
E--> 2270 Xaa Leu Glu Arg Val Asn Pro Arg Ser Ser Gly Ala Thr Leu Xaa Ser
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        2273 Ala Glu Val Glu Asp His Ser Phe Ser Tyr Pro Leu Gly Ala Tyr Ile
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        2277 705             710             715             720
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        2285             740             745             750
        2287 Ala Leu Ile Ile Phe Ser His His Arg Thr Leu Gly Ala Cys Ile Val
        2288             755             760             765
E--> 2290 Phe Thr Arg Phe Asn Xaa Val Arg His Cys Phe Leu Pro Thr Met Trp
        2291         770             775             780
        2293 Pro Asn Thr Leu Tyr Cys Leu Ile Arg Pro Arg Ala Lys Arg Val Gln
        2294 785             790             795             800
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        2297             805             810             815
        2299 Trp Leu Asp Thr Thr His Arg Leu Arg Asp Thr Met Pro Ser Leu Leu
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        2303             835             840             845
        2305 Ser Pro Tyr Lys Gly Val Val Pro Glu Asn Arg Gly His Gly Leu Gly
        2306         850             855             860
        2308 Ser Val Val Gly Pro Cys Ser Pro Gln Leu Gly Gly Leu Leu His Gln
        2309 865             870             875             880
E--> 2311 Val Gly Xaa Leu Leu Ala Gly Gln Ser Thr Leu Gly Arg Asp Gly Arg
        2312             885             890             895
E--> 2314 Asp Lys Xaa Lys Glu Gly Trp Leu Arg Leu Gly Phe Arg Gln Ser Ile
        2315         900             905             910
        2317 Val Tyr Glu Ala Asn Gly Ile Pro Pro Leu Gly Cys Leu Leu Val Ser
        2318         915             920             925
        2320 Ile Cys Cys Asp Gly Leu Phe Val Val Gly Gly Leu Val Arg Leu Leu
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RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003
TIME: 11:22:24

Input Set : A:\pto.amc.txt
Output Set: N:\CRF4\03202003\I892635.raw

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E--> 2323 Leu Ser Arg Glu Lys Val Phe Xaa Lys Glu Phe Asn Leu Thr Met Leu
     2324 945                   950                   955                960
     2326 Lys Ile Lys Gly Leu Ala Lys Lys Phe Gly Ser Thr Val Leu Lys Pro
     2327                  965                   970                   975
     2329 Glu Asn Val Tyr Val Glu Val Tyr Ser Thr Met Trp Lys Leu Glu Asn
     2330                  980                   985                   990
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     2333                  995                   1000                  1005
     2335 Thr Cys Tyr Glu Val Cys Ser Thr Met Trp Lys Gln Ser Asn Ala Leu
     2336     1010                  1015                  1020
E--> 2338 Ala Met Arg Phe Gly Leu Thr Tyr Ser Thr Met Asp Ala Xaa Lys Glu
     2339 1025                  1030                  1035                  1040
E--> 2342 Gly Thr Xaa Gln Asp Leu Val Gly Lys Asp Ser Ile Leu Ala Arg Gln
     2343                  1045                  1050                  1055
     2345 Met Pro Ile Gly Asn Gly Leu Thr Glu Thr Ser Thr Lys Thr Ser Asp
     2346                  1060                  1065                  1070
     2348 Leu Val Gly Asn Gly Cys Leu Val Arg Lys Asp Gly Ser Arg Leu Ile
     2349          1075                  1080                  1085
     2351 Lys Ile Lys Leu Ile Ile Tyr Gln Thr Leu Asn Gly Arg Ile Val Arg
     2352     1090                  1095                  1100
     2354 Lys Asp Gly Ser Arg Leu Ile Lys Ile Lys Leu Ile Val Tyr Gln Thr
     2355 1105                  1110                  1115                  1120
     2357 Leu Ile Thr Leu Asp Lys Arg Gly Thr Met Tyr Asn Trp Glu Ala Gln
     2358                  1125                  1130                  1135
     2360 Ile Leu Phe Pro Asn Thr Phe Leu Leu Lys Pro Phe Ala Thr Ile Ala
     2361          1140                  1145                  1150
E--> 2363 Ile Leu Ile Tyr Phe Phe Tyr Ile Ile Ile Xaa His Ser Tyr Met Arg
     2364     1155                  1160                  1165
E--> 2366 Tyr Asp Ile Asn Leu Arg Pro Ala Leu Val Asn Xaa Leu Ile Xaa Val
     2367     1170                  1175                  1180
     2369 Thr Pro Glu Ala Ile Ile Leu Thr Leu Thr Trp Arg Thr Leu Val Gly
     2370 1185                  1190                  1195                  1200
E--> 2372 Pro Xaa Ile Xaa Met Glu Val Asp Lys His Asp Asp Asp Gly Tyr Met
     2373                  1205                  1210                  1215
     2375 Phe Met Cys Leu Ser Lys Ser Ile Lys Leu Glu Ser Asn Lys Thr Ile
     2376          1220                  1225                  1230
     2378 Lys Val Gly Arg Pro Leu Ser Ser Met Ser Arg Ser Ser Thr Phe Gln
     2379          1235                  1240                  1245
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     2384 Arg His Arg Leu Ala Glu Thr Lys Gly Gln Ser Pro Asn Ser His Ser
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     2387 Lys Asp Glu Phe Ile Phe Ile Arg Ala Leu Gln Ser Cys Leu Ile Ile
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     2390 Phe Tyr Tyr Tyr Tyr Tyr Tyr Leu Asn Gly Lys Phe Thr Glu Tyr Ile
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      2402 1345               1350               1355               1360
      2404 Ser Ile Cys Ile Lys Asn Tyr Gln Leu Asp Phe Tyr Phe Leu Thr Leu
      2405               1365               1370               1375
      2407 Asn Lys Trp Thr Tyr Ile Ile Ile Lys Ser Cys Asp Val Val Ile Thr
      2408               1380               1385               1390
E--> 2410 Tyr Phe Leu Ile Xaa Lys Ile Xaa Asn Arg Glu Lys Ile Arg Leu Leu
      2411     1395               1400               1405
E--> 2413 Ser Leu Leu Xaa Met Xaa Tyr Asn Ile Leu Ile Pro Phe Xaa Ile Asp
      2414     1410               1415               1420
      2416 Ser Arg Arg Ile Arg Lys Ile Ile Ile Ala Ser Asn Gln Ile Gln Asn
      2417 1425               1430               1435               1440
E--> 2419 Xaa Ile Met Leu Leu Thr Phe Glu Lys Ser Ser Ser Leu Asp Asn Ile
      2420               1445               1450               1455
E--> 2422 Leu Ile Asp Lys His Xaa Tyr Ile Tyr Ile Tyr Xaa Tyr Gln Leu Leu
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E--> 2425 Lys Xaa Ile Phe Lys Leu Ile Lys Phe Ile Lys Ile Lys Arg Thr Lys
      2426     1475               1480               1485
E--> 2428 Leu Val Leu His His Asn Val Val Ser Val Arg Thr Cys Glu Ile Xaa
      2429     1490               1495               1500
      2431 Ile Asn Thr Asp Arg Lys Phe Gln Thr Ile Thr Ser Ser Thr Lys Gln
      2432 1505               1510               1515               1520
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      2437 Leu Leu Ile Leu Trp Thr Tyr Asn Thr Ser Gln Glu Thr Glu Thr Lys
      2438               1540               1545               1550
E--> 2440 Val Ala Glu Ser Trp Gln Xaa Leu Lys Arg Leu Phe Val Glu Val Lys
      2441     1555               1560               1565
      2443 Glu Thr His Val Tyr Lys Asn Cys His Asp Tyr Thr Leu Lys Lys Lys
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       2484                 1780                   1785                   1790
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       2487       1795                   1800                   1805
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same
error

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E--> 2554 Tyr Gly Xaa Gly Tyr Gln Xaa Xaa Ile Val Lys Ile Xaa Ile Asn Cys
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E--> 2560 Arg Leu Asp Leu Glu Ile Glu Val Glu Thr Xaa Xaa Glu Ile Met Leu
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     2563 Ile Met Gly Asn Phe Leu Leu Phe Pro Arg Arg Pro Trp Lys Pro Asn
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E--> 2566 Ile Arg Asn Arg Ser Cys Asn Asn His Val Ile Ile Xaa Glu Leu Val
     2567     2210                2215                2220
E--> 2569 Val Val Ile Leu Arg Pro Gln Ile Thr Val Phe Xaa Gln Gly Thr Asn
     2570 2225                2230                2235                2240
     2572 Ile Asn Glu Ser Asn Val Val Ser Ile Leu Phe Tyr Thr Phe Ile Pro
     2573           2245                2250                2255
E--> 2575 Xaa Ser Arg Cys Ser His Asp Leu Ala His Pro Lys Cys Ile Arg Ser
     2576           2260                2265                2270
     2578 Leu Ile Pro Leu Arg Trp Ser Val Leu Thr Arg Asp Leu Val Glu Gly
     2579           2275                2280                2285
E--> 2582 Ala Val Ser Phe Xaa Tyr Val Glu Val Lys Asp His Leu Tyr Xaa Xaa
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E--> 2585 Pro Cys Arg Phe Thr Xaa Gly Xaa Ser Leu Glu Ile Gly Leu Pro Trp
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     2602           20                25                30
     2604 Phe Leu Ser Lys Asp Ser Pro Leu Arg Phe Pro Thr Phe Thr Ser Phe
     2605           35                40                45
     2607 Gly Pro Glu Ala Ser Gln Arg Ala Gly Ile His Phe Ser Ile Ala Pro
     2608           50                55                60
     2610 Met Arg Lys Ala Ser Arg Gly Gly Ser Leu Pro Arg Arg Ala Val Leu
     2611 65                70                75                80
     2613 Pro Val Arg Leu Val Arg His Gly Ser Ile Leu Arg Pro Arg Met Pro
     2614           85                90                95
     2616 Glu Pro Met Arg Arg Arg Arg Arg Trp Gln Arg Gly Leu Asp His
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E--> 2625 Gln Leu Leu Gln Arg Val Arg Asp Asp Arg Arg Arg Pro Lys Lys Xaa
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E--> 2628 Lys Glu Ile Ala Ala Phe Leu Ala Xaa Thr Ser His Xaa Thr Thr Gly
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E--> 2631 Asn Ser His Ile Ser Arg Ser Ser Thr Val Tyr Gly Ile Xaa Asn Met
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E--> 2634 Phe Gly Val Trp Gln Val Gly Xaa Arg Arg Ala Arg Trp Ser Val Arg
      2635         195             200                 205
E--> 2637 Leu Gly Leu Leu Leu Arg Pro Xaa Thr Lys Pro Ser Ser Xaa Tyr Cys
      2638         210             215                 220
E--> 2642 Val Pro Xaa Pro Xaa Gly Arg Ala Leu Gln Gln Lys Ile Leu Arg Pro
      2643 225             230                 235                 240
E--> 2645 Lys Pro Xaa Gln Ile Ser Xaa Xaa Ala Xaa Phe Xaa Gln Phe Xaa Ala
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      2648 Ala Ile Glu Phe Thr Thr Met Pro Phe Leu Thr Gln Gln Ser Asp Val
      2649                 260                 265                 270
E--> 2651 Xaa Cys Val Gln Gln Xaa Gln Xaa Arg Ala Gly Arg Glu Ser His Arg
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E--> 2654 Phe Xaa Xaa Xaa Gln Gln Pro Arg Pro Gly Gly His Xaa Arg Asp His
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E--> 2657 Leu Xaa Gln Asp Gly Ser Val Val Leu Asp Asp Ser Ser Val Ala Gln
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      2669 Gly Asp Arg Leu Leu Gln Glu Val Leu Arg Leu Ala Gly Gly Glu Leu
      2670         370             375                 380
      2672 Arg Arg Gln Leu Gly Leu Leu Gln Pro Glu Thr Leu Cys Phe Tyr Ser
      2673 385             390                 395                 400
      2675 Ser Tyr Ser His Ile Leu Ala Val Ser Tyr Gly Asp Asn Leu Glu Cys
      2676                 405                 410                 415
      2678 Tyr Asn Gln Arg Pro Phe Thr Ser Asp Thr Thr Val Thr Asn Pro Cys
      2679         420                 425                 430
      2681 Asn Asn Ala Ile Asn Ala Ile Thr Glu Ile Ala Thr Pro Val Asp Cys
      2682         435                 440                 445
E--> 2684 Arg Ser Cys Gly Gly Ser Leu Gln Lys Leu Xaa Tyr Ile His Gly Pro
      2685         450             455                 460
      2687 Gln Leu Ser Leu Thr Val Ile Ile Cys Ile His Gln Met Ser Ser Asn
      2688 465                 470                 475                 480
      2690 Val Leu Glu Val Asn Ala Tyr Ser Ile Gly Lys Met Lys Met Leu Glu
      2691                 485                 490                 495
      2693 Ile Lys Leu Ile Ile Phe Leu Leu Ile Phe Tyr Ile Phe Ser Arg Ser
      2694                 500             505                 510
      2696 Lys Ser Asn Tyr Lys Asp Phe Ile Tyr Gly Leu Gly Tyr Glu Tyr Leu
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2697           515                520                525
2699 Ile Ile Lys Ile Asn Ile Leu Phe Asn Leu Lys Asp Leu Ile Ile Ser
2702      530                535                540
2704 Ile Phe Tyr Met Asp Trp Asp Ile Asn Ser Ile Tyr Leu Lys Phe Tyr
2705 545                550                555                560
2707 Lys Asn Phe Lys Phe Lys Asn Asn Thr Lys Asn Ile Ile Arg Ser Asp
2708                565                570                575
2710 Arg Glu Arg Asp Asp Asp His Glu Ile Glu Val Glu Ser Lys Lys Glu
2711           580                585                590
2713 Ile Thr Leu Ile Met Gly Asn Phe Val Leu Phe Ala Arg Ser Arg Trp
2714      595                600                605
2716 Pro Trp Thr Pro Asn Ile His Asn Arg His Ala Ile Thr Met Leu Ser
2717      610                615                620
2719 Tyr Val Ser Leu Ser His Ile Leu Pro Ile Thr Ser Ser Arg Ile Leu
2720 625                630                635                640
E--> 2722 Ile Lys Pro Ala His His Ser Phe Ala Pro Leu Tyr His Xaa Ser Val
2723           645                650                655
E--> 2725 Arg Met Ala Pro Ile Pro Ser Val Trp Ser Pro Gly Xaa Trp Ser Val
2726           660                665                670
E--> 2728 Leu Thr Arg Gly Leu Val Glu Gly His Arg Pro Cys Xaa Leu Arg Gln
2729           675                680                685
2731 Arg Leu Lys Ile Thr Pro Leu Ala Ile Arg Trp Val Pro Ile Arg Ser
2732      690                695                700
E--> 2734 Lys Ser Gly Gly Phe Xaa Thr Arg Pro Ile Gln Tyr Leu Ser Gln Glu
2735 705                710                715                720
2737 Leu Glu Leu Arg Val Gly Ser Thr Pro Asn Ala Val Pro Gly Val Ala
2738           725                730                735
2740 Phe Ile Pro Ile Pro Ala Cys Asp His Thr Leu Ser Ser Ser Val Ile
2741           740                745                750
E--> 2743 Ile Val Arg Trp Val His Ala Leu Ser Asn Leu Leu Asp Ser Xaa Ser
2744           755                760                765
2746 Phe Asp Thr Ala Ser Tyr Leu Leu Cys Gly Pro Ile His Ser Cys Ile
2747      770                775                780
2749 Val Ser Tyr Gly Leu Glu Gln Ser Val Cys Arg Gly Thr Val Ser Ser
2750 785                790                795                800
2752 Gly Trp Leu Ala Ser Gly Ser Trp His Val Gly Ser Ile Gln His Ile
2753           805                810                815
2755 Gly Leu Gly Ile Pro Cys Arg Val Tyr Cys Gly Ser His Val Met Trp
2756           820                825                830
2758 Gly Gly Cys Gln Asn Met Leu Tyr His Ser Leu Pro Thr Lys Glu Leu
2759           835                840                845
2762 Cys His Arg Arg Ile Val Asp Thr Ala Trp Val Leu Trp Ser Val Leu
2763      850                855                860
E--> 2765 Val Arg Leu Ser Trp Val Asp Tyr Phe Ile Lys Leu Ala Xaa Cys Trp
2766 865                870                875                880
E--> 2768 Leu Gly Lys Val His Leu Val Gly Met Val Glu Thr Xaa Pro Arg Lys
2769           885                890                895
2771 Val Gly Asp Leu Val Phe Asp Asn Gln Leu Phe Met Arg Arg Met Val
2772           900                905                910
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     2774 Ser Leu Arg Trp Gly Val Cys Ser Phe Arg Phe Val Ala Met Asp Cys
     2775         915             920                 925
E--> 2777 Leu Leu Glu Ala Trp Phe Asp Cys Ser Val Gly Arg Arg Tyr Leu Xaa
     2778         930             935                 940
     2780 Arg Ser Ser Ile Pro Cys Ser Glu Lys Asp Leu Pro Arg Ser Leu Ala
     2781 945                 950                 955                 960
     2783 Arg Pro Cys Ser Gln Arg Met Cys Met Ser Arg Ser Ile Gln Pro Cys
     2784                 965                 970                 975
     2786 Gly Ser Arg Met His Gln Leu Gly Leu Ala Cys Ser Arg Leu Lys Gln
     2787             980             985                 990
     2789 Lys Asp Ile Leu Ala Thr Arg Phe Ala Gln Pro Cys Gly Ser Asn Gln
     2790         995                 1000                1005
     2792 Met His Leu Leu Gly Leu Ala Leu Thr Arg Gln Trp Thr Leu Val Ser
     2793     1010                1015                1020
E--> 2795 Glu Lys Gly Leu Xaa Lys Thr Leu Ala Arg Thr Ser Arg Tyr Leu Leu
     2796 1025                1030                1035                1040
     2798 Asp Asn Arg Cys Leu Val Met Asp Leu Arg Leu Ser Arg Gln Arg Leu
     2799                 1045                1050                1055
     2801 Ala Glu Thr Trp Ala Met Asp Ala Tyr Lys Glu Arg Met Ala Arg Asp
     2802             1060                1065                1070
     2804 Arg Ser Asn Asn Tyr Lys Phe Ile Lys His Leu Met Asp Ala Tyr Lys
     2805         1075                1080                1085
E--> 2807 Glu Arg Thr Asp Arg Asp Arg Ser Asn Asn Tyr Lys Phe Ile Lys Xaa
     2808     1090                1095                1100
E--> 2810 Leu Leu Xaa His Trp Thr Lys Glu Val Leu Cys Asn Ile Lys Ile Gly
     2811 1105                1110                1115                1120
     2813 Arg His Lys Tyr Tyr Phe Gln Ile Leu Phe Ser Leu Ser Pro Ser Pro
     2814                 1125                1130                1135
     2816 Pro Leu Pro Phe Ser Ile Phe Ser Ile Leu Ser His Asn Ile Arg Thr
     2817             1140                1145                1150
E--> 2819 Asp Met Thr Thr Phe Asp Leu Leu Thr Xaa Leu Xaa His Gln Lys Pro
     2822         1155                1160                1165
E--> 2824 Tyr Cys Leu Pro His Asp Gly Asp Glu Leu Leu Val Gln Xaa Ser Asn
     2825     1170                1175                1180
E--> 2827 Xaa Trp Lys Trp Thr Ser Thr Met Thr Arg Met Ala Thr Cys Ser Cys
     2828 1185                1190                1195                1200
     2830 Val Asp Phe Pro Ser Asn Gln Ser Ser Trp Asn Arg Ile Arg Arg Leu
     2831             1205                1210                1215
     2833 Lys Gly Asp Asp His Val Gln Cys His Ala His Gln His Asn Ser Asn
     2834             1220                1225                1230
     2836 Thr Val Gln Lys Asp Leu Ile Leu His Leu Ala His Pro Ala Ala Gly
     2837         1235                1240                1245
     2839 Ile Asp Trp Arg Lys Arg Arg Val Ser Leu Pro Ile His Ile Gln Arg
     2840     1250                1255                1260
     2842 Thr Asn Ser Phe Ser Ser Asp Glu His Phe Ser Pro Ala Leu Tyr Phe
     2843 1265                1270                1275                1280
     2845 Ile Ile Ile Ile Ile Ile Asn Met Val Ser Leu Gln Asn Ile Ile Phe
     2846             1285                1290                1295
     2848 Phe Gln Asn Ile Leu Lys Asn Asp Lys Gly Arg Arg Trp Ile Ser Asp
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RAW SEQUENCE LISTING   DATE: 03/20/2003
PATENT APPLICATION: US/09/892,635   TIME: 11:22:24

Input Set : A:\pto.amc.txt
Output Set: N:\CRF4\03202003\I892635.raw

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     2849          1300              1305             1310
     2851 Phe Tyr Cys Glu Gln Lys Ser Leu Val Arg Thr Ser Lys Met Cys Gln
     2852     1315             1320             1325
     2854 Met Asn Pro Asn Lys Trp Val Trp Ser Met Val Thr Met Arg Ser Val
     2855    1330             1335             1340
     2857 Phe Val Tyr Lys Lys Ile Ile Asn Leu Ile Phe Ile Phe Pro Leu Ile
     2858 1345             1350             1355             1360
E--> 2860 Ser Gly His Asp Ile Ser Ser Asn His Val Met Xaa Asp Glu Xaa His
     2861             1365             1370             1375
E--> 2863 Ile Phe Xaa Lys Leu Xaa Ile Glu Lys Lys Asp Tyr Tyr Pro Phe Tyr
     2864          1380             1385             1390
E--> 2866 Xaa Cys Xaa Ile Ile Phe Ser Leu Ser Ile Ile His Val Glu Glu Arg
     2867          1395             1400             1405
E--> 2869 Leu Ser His Gln Ile Lys Tyr Arg Xaa Lys Ser Cys Phe Leu Asn Ser
     2870    1410             1415             1420
E--> 2872 Lys Asn Asn Leu Pro Leu Leu Ile Ile Ser Leu Leu Ile Ser Ile Xaa
     2873 1425.            1430             1435             1440
E--> 2875 Ile Tyr Ile Tyr Xaa Tyr Ile Asn Phe Xaa Ile Phe Leu Asn Leu Asn
     2876          1445             1450             1455
     2878 Leu Ser Lys Lys Asp Lys Leu Asn Phe Cys Ile Ile Met Val Glu Leu
     2879          1460             1465             1470
E--> 2882 Val Lys Xaa Gly Ser Arg Thr Leu Ile Glu Asn Ser Lys Pro Leu Leu
     2883          1475             1480             1485
     2885 Val Leu Leu Asp Glu Asn Lys Thr Ile Lys Asn Pro Leu Ile Tyr Ile
     2886    1490             1495             1500
     2888 Tyr Ile Tyr Ile Leu Leu Tyr Leu Phe Phe Gly Arg Thr Thr Gln Val
     2889 1505             1510             1515             1520
E--> 2891 Arg Lys Pro Lys Gln Arg Trp Arg Lys Val Gly Arg Xaa Arg Asp Phe
     2892             1525             1530             1535
     2894 Ser Lys Arg Arg His Thr Ser Ile Arg Ile Val Met Thr Ile Arg Arg
     2895          1540             1545             1550
     2897 Lys Arg Gly Glu Arg Glu Arg Arg Lys Arg His Cys Pro Val Leu Ser
     2898          1555             1560             1565
     2900 Met Arg Asn Cys Leu Ser Thr Asn Glu Gln Tyr Lys His Leu Cys Arg
     2901    1570             1575             1580
     2903 Gln Ile Cys Ser Lys Gly Ser Phe Thr Ala Gly Arg Asn Pro Phe Leu
     2904 1585             1590             1595             1600
     2906 Tyr Ile Ser Thr Thr Ser His Pro His His His His His His His Cys
     2907          1605             1610             1615
     2909 Gly Gly Arg Pro Cys Cys Trp Ser Phe Leu Pro Trp Pro Arg Arg Ser
     2910          1620             1625             1630
     2912 Ala Pro Ser Pro Ser Asn Ala Glu Gly Lys Pro Gly Gly Leu Ser Ala
     2913    1635             1640             1645
     2915 Pro Ala Gly Cys Ala Val Ala Ser Thr Ala Gly Ala Val Thr Arg Ile
     2916    1650             1655             1660
E--> 2918 His Xaa Ala Val Lys Asp Ala Xaa Xaa Asn Ala Xaa Ala Pro Arg Pro
     2919 1665             1670             1675             1680
E--> 2921 Pro Leu Pro Leu Arg Ala Ala Val Ala Xaa Leu Ala Arg Ser Ser Ser
     2922          1685             1690             1695
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E--> 2924 Pro Pro Ser Ser Ser Arg Cys Ser Ile Xaa Xaa Thr Gln Pro Ala Pro
     2925          1700                1705                1710
E--> 2927 Ala Xaa Ala Ser Thr Arg Xaa Pro Pro Ser Ser Pro Pro Pro Xaa Pro
     2928     1715                1720                1725
E--> 2930 Ser Xaa Gly Ser Gly Xaa Pro Ala Thr Thr Pro Xaa Ile Xaa Xaa Xaa
     2931     1730                1735                1740
E--> 2933 Ser Arg Leu Ser Trp Xaa Xaa Xaa Leu Xaa Arg Xaa Xaa Val Ile Xaa
     2934 1745             1750                1755                1760
E--> 2936 Xaa Ser Pro Glu Ala Arg Leu Gln Xaa Xaa Asp Arg Xaa Leu Asn Ala
     2937              1765                1770                1775
E--> 2939 Leu Gly Xaa Ala Arg Gly Trp Ser Thr Val Pro Xaa Gly Xaa Ser Arg
     2942          1780                1785                1790
E--> 2944 Gly Val Thr Ala Ser Ser Xaa Asn Arg Thr Leu Ile Gly Leu Leu Arg
     2945          1795                1800                1805
E--> 2947 Arg Gln Leu Ala Xaa Ala Val Arg Cys Xaa Gln Xaa Ile Leu Arg Pro
     2948     1810                1815                1820
     2950 Lys Pro His Pro Asn Leu Ile Gln Leu Gln Leu Arg Ala Gly Arg Glu
     2951 1825             1830                1835                1840
     2953 Asn His Arg Leu Arg Pro Ala Gln Gln Pro Arg Pro Gly Gly His Arg
     2954          1845                1850                1855
     2956 Pro Asp His Leu Leu Gln Asp Gly Ser Val Val Leu Asp Asp Ser Ser
     2957          1860                1865                1870
     2959 Val Ala Gln Ala Val Val Pro Arg Arg Asp Asn Arg Glu Leu Asp Ala
     2960          1875                1880                1885
     2962 Ile Gln Arg Arg Pro Gly Gly Arg Lys Ala Ser Gly Leu Arg Cys His
     2963     1890                1895                1900
     2965 His Gln His His Gln Trp Arg Val Gly Val Arg Glu Arg Val Arg Cys
     2966 1905             1910                1915                1920
E--> 2968 Gln Gly Gly Gly Asp Arg Leu Leu Gln Xaa Val Leu Arg Leu Ala Gly
     2969          1925                1930                1935
E--> 2971 Gly Glu Leu Arg Arg Gln Leu Gly Leu Leu Gln Pro Xaa Ser Leu Tyr
     2972          1940                1945                1950
E--> 2974 Leu Xaa Arg Tyr Tyr Val Arg Ile His Val Ile Thr Gln Thr Leu Leu
     2975          1955                1960                1965
     2977 Leu Lys Arg Leu Arg Glu Leu Ile Val Glu Val Ala Glu Glu Ile Phe
     2978     1970                1975                1980
     2980 Asn Lys Ser Ala Glu Gln Val His Gly Pro Gln Ser Ser Leu Ile Val
     2981 1985             1990                1995                2000
E--> 2983 Val Arg Cys Ile His Gln Met Ser Trp Ser Xaa Xaa Met Arg Xaa Xaa
     2984          2005                2010                2015
     2986 Ser Val Asn Arg Cys Asn Lys Asn Tyr Leu Phe Phe Ile Ile Ile Asn
     2987          2020                2025                2030
     2989 Ile Leu Ile Tyr Phe Leu Ile Leu Lys Ile Leu Lys Asn Leu Ile Ile
     2990     2035                2040                2045
E--> 2992 Arg Ile Leu Tyr Met Asp Trp Asp Thr Xaa Lys Xaa Xaa Leu Xaa Lys
     2993     2050                2055                2060
     2995 Leu Ile Tyr Phe Ser Gly Ser Lys Asn Ile Ile Ile Arg Ile Phe Tyr
     2996 2065             2070                2075                2080
E--> 2998 Met Asp Xaa Asp Thr Asn Xaa Xaa Leu Lys Phe Xaa Tyr Lys Ile Val
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      2999              2085              2090              2095
E--> 3002 Lys Ser Lys Asn Asn Thr Lys Asn Ile Xaa Ser Tyr Arg Glu Cys Gly
     3003          2100              2105              2110
E--> 3005 Ala Ile Ser Arg Ser Arg Leu Arg Leu Xaa Xaa Lys Leu Cys Ser Trp
     3006      2115              2120              2125
     3008 Glu Ile Phe Phe Cys Phe Gln Asp Asp Asp Arg Gly Asn Leu Thr Ser
     3009      2130              2135              2140
E--> 3011 Ala Ile Gly His Ala Ile Thr Met Leu Ser Ser Xaa Asn Leu Ser Ser
     3012 2145              2150              2155              2160
E--> 3014 Ser Ser Tyr Gly His Lys Ser Gln Ser Ser Xaa Lys Ala Arg Ile Leu
     3015          2165              2170              2175
E--> 3017 Met Ser Pro Thr Tyr Leu Tyr Cys Phe Thr Leu Leu Tyr Arg Xaa Arg
     3018          2180              2185              2190
     3020 Gly Val Arg Thr Ile Trp Pro Ile Pro Ser Ala Asp His Tyr Asp Leu
     3021          2195              2200              2205
E--> 3023 Tyr Val Gly Ala Cys Pro Glu Ile Leu Arg Gly His Arg Ser His Xaa
     3024      2210              2215              2220
E--> 3026 Ser Thr Trp Arg Leu Lys Ile Thr Phe Ile Xaa Xaa Leu Val Asp Ser
     3027 2225              2230              2235              2240
E--> 3029 Lys Leu Glu Val Asp Leu Xaa Arg Arg Ser Val Ser Leu Gly Thr Leu
     3030          2245              2250              2255
E--> 3032 Gly Xaa
     3036 <210> SEQ ID NO: 26
     3037 <211> LENGTH: 2359
     3038 <212> TYPE: PRT
     3039 <213> ORGANISM: Musa acuminata
     3041 <400> SEQUENCE: 26
     3042 Gln Arg Gly Arg Leu Met Ser Tyr His Cys His Arg Met Arg Ser Arg
     3043   1               5                  10                 15
E--> 3045 Ile Gln His Ala Ile Cys Xaa Leu Gly His Arg Thr Ser Tyr Pro Lys
     3046          20               25               30
     3048 Thr Arg Leu Cys Asp Phe Pro His Ser Pro His Leu Val His Arg Lys
     3049          35               40               45
     3051 Leu His Ser Gly Gln Glu Ser Ile Ser Leu Tyr Lys His His Leu Pro
     3052      50               55               60
     3054 Pro Thr Pro Pro Pro Leu Pro Leu Leu Arg Arg Met Lys Ala Leu Leu
     3055 65               70               75               80
     3057 Leu Val Ile Phe Thr Leu Ala Ser Ser Leu Gly Ala Phe Ala Glu Gln
     3058          85               90               95
     3062 Cys Gly Arg Gln Ala Gly Gly Ala Leu Cys Pro Gly Gly Leu Cys Cys
     3063          100              105              110
     3065 Ser Gln Tyr Gly Trp Cys Gly Asn Thr Asp Pro Tyr Cys Gly Gln Gly
     3066      115              120              125
     3068 Cys Gln Ser Gln Cys Gly Gly Ser Gly Gly Ser Gly Gly Gly Ser Val
     3069      130              135              140
     3071 Ala Ser Ile Ile Ser Ser Ser Leu Phe Glu Gln Met Leu Lys His Arg
     3072 145              150              155              160
     3074 Asn Asp Ala Ala Cys Pro Gly Lys Gly Phe Tyr Thr Tyr Asn Ala Phe
     3075          165              170              175
```

Same

Same

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      3077 Ile Ala Ala Ala Asn Ser Phe Ser Gly Phe Gly Thr Thr Gly Asp Asp
      3078             180             185             190
E--> 3080 Pro Arg Arg Xaa Arg Arg Ser Arg Leu Ser Trp Arg Xaa Arg Leu Thr
      3081         195             200             205
E--> 3083 Xaa Arg Gln Val Ile Xaa Thr Ser Pro Glu Ala Arg Lys Leu Phe Met
      3084         210             215             220
E--> 3086 Gly Xaa Lys Thr Glu Cys Leu Gly Phe Gly Arg Trp Val Gly Asp Ala
      3087 225             230             235             240
E--> 3089 Pro Asp Gly Pro Tyr Ala Leu Gly Tyr Cys Phe Val Gln Xaa Gln Asn
      3090             245             250             255
E--> 3092 Pro His Arg Xaa Thr Ala Ser Xaa Leu Pro Xaa Ala Val Arg Cys Ser
      3093             260             265             270
E--> 3095 Lys Lys Tyr Gly Arg Ser Pro Ser Lys Phe His Xaa Xaa Pro Xaa Ser
      3096         275             280             285
E--> 3098 Xaa Ser Ser Ser Pro Arg Ser Ser Ser Gln Arg Cys Xaa Phe Arg Asn
      3099     290             295             300
E--> 3101 Asn Pro Met Cys Xaa Ala Cys Ser Xaa Tyr Xaa Tyr Gly Pro Ala Gly
      3102 305             310             315             320
E--> 3104 Arg Ala Ile Gly Ser Asp Xaa Xaa Asn Asn Pro Asp Leu Val Ala Thr
      3105             325             330             335
E--> 3107 Asp Ala Thr Ile Ser Phe Lys Thr Xaa Leu Trp Phe Trp Met Thr Xaa
      3108             340             345             350
E--> 3110 Gln Ser Pro Lys Pro Xaa Cys His Asp Val Ile Thr Gly Ser Trp Thr
      3111         355             360             365
      3113 Pro Ser Asn Ala Asp Gln Ala Ala Gly Arg Leu Pro Gly Tyr Gly Val
      3114         370             375             380
      3116 Thr Thr Asn Ile Ile Asn Gly Gly Leu Glu Cys Gly Lys Gly Tyr Asp
      3117 385             390             395             400
      3119 Ala Arg Val Ala Asp Arg Ile Gly Phe Tyr Lys Arg Tyr Cys Asp Leu
      3122             405             410             415
      3124 Leu Gly Val Ser Tyr Gly Asp Asn Leu Asp Cys Tyr Asn Gln Arg Pro
      3125             420             425             430
      3127 Phe Ala Ser Thr Ala Ala Thr Ala Thr Phe Arg Ala Met Glu Thr Thr
      3128         435             440             445
      3130 Trp Ser Ala Thr Thr Arg Asp Pro Leu Leu Ser Pro Ile Leu Leu Arg
      3131         450             455             460
      3133 Ile His Val Ile Thr Gln Thr Leu Leu Leu Arg Arg Leu Arg Glu Leu
      3134 465             470             475             480
E--> 3136 Thr Val Glu Val Ala Glu Glu Val Phe Asn Lys Ser Leu Xaa Thr Tyr
      3137             485             490             495
      3139 Met Ala His Asn Tyr Arg Pro Ser Tyr Ala Ser Ile Lys Cys Pro Gln
      3140         500             505             510
      3142 Met Ser Trp Ser Lys Met Arg Ile Arg Ser Val Lys Arg Cys Asn Lys
      3143         515             520             525
      3145 Asn Leu Phe Phe Tyr Asn Tyr Lys Tyr Phe Asn Ile Phe Phe Asn Leu
      3146         530             535             540
      3148 Lys Asp Pro Lys Asn Leu Ile Ile Arg Ile Leu Tyr Met Asp Trp Asp
      3149 545             550             555             560
      3151 Thr Lys Asn Ile Leu Lys Leu Ile Tyr Phe Leu Ile Leu Lys Ile Leu
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      3152                   565                   570                   575
      3154 Val Phe Ser Ile Trp Ile Gly Ile Leu Thr Arg Phe Thr Tyr Lys Asn
      3155               580                   585                   590
      3157 Phe Asn Ile Lys Ile Leu Asn Leu Lys Ile Lys Ile Leu Lys Ile Ser
      3158               595                   600                   605
      3160 Lys Tyr Asn Gly Asn His Glu Ile Glu Asn Val Met Ile Glu Ile Met
      3161     610                   615                   620
      3163 Arg Ser Arg Leu Arg Val Lys Arg Lys Leu Arg Ser Trp Glu Ile Ser
      3164 625                   630                   635                   640
      3166 Phe Cys Leu His Gly Arg Asp Gly Asp Arg Gly His Leu Thr Ser Thr
      3167               645                   650                   655
      3169 Thr Gly Met Gln Pro Cys Cys His Met Leu Ala Cys Leu Ile Ser Tyr
      3170               660                   665                   670
      3172 Asp His Glu Ser His Ser Leu His Glu Tyr Leu Ser Gln Leu Ser Ile
      3173               675                   680                   685
E--> 3175 Thr Val Leu His Leu Cys Thr Ile Xaa Glu Val Phe Val Trp Leu Asp
      3176     690                   695                   700
E--> 3178 Pro Ser Arg Val Tyr Gly Leu Pro Xaa Pro Gly Ala Cys Pro Glu Val
      3179 705                   710                   715                   720
E--> 3182 Leu Arg Gly Ile Asp Leu Val Xaa Leu Gly Arg Gly Arg Ser Leu Leu
      3183               725                   730                   735
      3185 Leu Ser Val Gly Cys Leu Tyr Lys Gly Arg Asn His Glu Gly Asp Ser
      3186               740                   745                   750
      3188 Leu Asp Leu Phe Asn Ile Ala Ser Lys Ser Trp Ser Tyr Val Tyr Glu
      3189               755                   760                   765
      3191 Val Arg Pro Pro Met Leu Phe Leu Gly Ser Leu Leu Tyr Leu Phe Leu
      3192     770                   775                   780
      3194 His Val Ile Ile His Ser Ser Phe Asn His Leu Gln Ser Ser Ser Tyr
      3195 785                   790                   795                   800
E--> 3197 Val Gly Cys Met His Cys Leu Ile Tyr Ser Ile Gln Xaa Arg Ser Thr
      3198               805                   810                   815
      3200 Leu Leu Pro Thr Tyr Tyr Val Ala Gln Tyr Ile Val Val Leu Ser His
      3201               820                   825                   830
      3203 Thr Ala Ser Ser Lys Ala Cys Ala Glu Glu Leu Cys Gln Val Val Gly
      3204               835                   840                   845
      3206 Trp Pro Arg Ala His Gly Ile Glu Leu Ala Arg Tyr Asn Thr Ser Ala
      3207     850                   855                   860
      3209 Gly Tyr His Ala Glu Ser Ile Val Val Val Asp Met Ser Cys Gly Val
      3210 865                   870                   875                   880
      3212 Asp Ala Lys Ile Cys Tyr Ile Ile Leu Ser Leu Gln Arg Ser Cys Ala
      3213               885                   890                   895
      3215 Ile Gly Glu Ser Trp Thr Arg Leu Gly Phe Cys Gly Arg Ser Leu Phe
      3216               900                   905                   910
      3218 Ala Ser Val Gly Trp Ile Thr Ser Ser Ser Trp Pro Ser Val Gly Trp
      3219               915                   920                   925
E--> 3221 Ala Lys Tyr Thr Trp Gly Trp Ser Arg Gln Xaa Gln Gly Arg Leu Ala
      3222     930                   935                   940
      3224 Lys Thr Trp Phe Ser Thr Ile Asn Cys Leu Gly Glu Trp Tyr Pro Ser
      3225 945                   950                   955                   960
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        RAW SEQUENCE LISTING              DATE: 03/20/2003
        PATENT APPLICATION:  US/09/892,635    TIME: 11:22:24

        Input Set : A:\pto.amc.txt
        Output Set: N:\CRF4\03202003\I892635.raw

     3227 Val Gly Val Ser Ala Arg Phe Gly Leu Leu Arg Trp Ile Val Cys Cys
     3228               965               970               975
E--> 3230 Arg Arg Leu Gly Ser Ile Ala Leu Lys Ser Gly Glu Gly Ile Xaa Gly
     3231          980               985               990
     3233 Val Gln Phe Asp His Val Glu Val Asn Lys Arg Thr Cys Gln Glu Val
     3234          995              1000              1005
     3236 Trp Leu Asp Arg Val Lys Ala Arg Glu Cys Val Cys Arg Gly Leu Phe
     3237    1010              1015              1020
     3239 Asn His Val Glu Ala Arg Glu Cys Thr Asn Cys Glu Val Trp Leu Ala
     3242 1025              1030              1035              1040
     3244 His Val Ser Arg Arg Ile Tyr Leu Leu Arg Gly Leu Leu Asn His Val
     3245               1045              1050              1055
     3247 Glu Ala Ile Lys Cys Thr Cys Tyr Glu Val Trp Leu Asp Leu Leu Asp
     3248          1060              1065              1070
E--> 3250 Asn Gly Arg Xaa Val Arg Arg Asp Xaa Pro Arg Leu Ser Trp Gln Gly
     3251          1075              1080              1085
     3253 Leu Val Asp Thr Cys Ser Thr Ile Asp Ala Tyr Arg Trp Ile Asp Asp
     3254    1090              1095              1100
     3256 Leu Val Asp Lys Asp Leu Arg Leu Ser Gly Gln Trp Met Pro Ile Ser
     3257 1105              1110              1115              1120
     3259 Lys Lys Gly Trp Leu Glu Ile Asn Lys Asp Gln Ile Ile Asn Ile Asn
     3260          1125              1130              1135
     3262 Leu Ser Asn Thr Trp Thr His Ile Ser Glu Lys Gly Arg Ile Glu Ile
     3263          1140              1145              1150
E--> 3265 Asn Lys Asp Gln Ile Ile Asn Ile Ser Leu Asn Ser Xaa Tyr Xaa Ile
     3266          1155              1160              1165
     3268 Gly Gln Lys Arg Tyr Tyr Val Ile Leu Lys Leu Gly Gly Thr Asn Ile
     3269    1170              1175              1180
     3271 Ile Ser Lys Tyr Phe Ser Pro Ala Leu Arg His His Cys His Phe Asn
     3272 1185              1190              1195              1200
E--> 3274 Leu Phe Phe Leu Tyr Asn Tyr Xaa Ile Thr Phe Val His Glu Ile His
     3275          1205              1210              1215
E--> 3277 Lys Pro Ser Thr Cys Phe Ser Lys His Xaa Asp Tyr Xaa Asp Thr Arg
     3278          1220              1225              1230
     3280 Ser His Asn Ile Ala Tyr Leu Asn Met Met Glu Met Asn Phe Ser Trp
     3281          1235              1240              1245
E--> 3283 Ser Xaa Tyr Leu Xaa Asn Gly Ser Gly Gln Ala Arg Leu Gly Trp Leu
     3284    1250              1255              1260
     3286 His Val His Val Leu Thr Phe Gln Val Ile Asn Gln Ala Gly Ile Glu
     3287 1265              1270              1275              1280
     3289 Asp Asp Ser Arg Ala Met Thr Ile Lys Phe Asn Val Thr Leu Ile Asn
     3290          1285              1290              1295
     3292 Ile Ile Pro Thr Pro Cys Arg Lys Ile Leu Ser Tyr Ile Asp Leu Pro
     3293          1300              1305              1310
     3295 Ile Arg Pro Pro Ala Ser Ile Gly Gly Asn Glu Gly Ser Val Ser Gln
     3296          1315              1320              1325
     3298 Phe Thr Phe Lys Gly Arg Ile His Phe His Gln Met Ser Thr Ser Val
     3299    1330              1335              1340
     3302 Leu Leu Asp Tyr Ile Leu Leu Leu Leu Leu Leu Leu Ile Glu Trp Val
```

Same (handwritten annotation with signature)

Input Set : A:\pto.amc.txt
Output Set: N:\CRF4\03202003\I892635.raw

```
        3303 1345              1350              1355              1360
        3305 Tyr Arg Ile Tyr Arg Tyr Phe Ser Phe Asn Lys Ile Phe Lys Met Ile
        3306              1365              1370              1375
        3308 Lys Gly Glu Gly Gly Phe Asp Leu Arg Ile Phe Ile Val Ser Asn Lys
        3309              1380              1385              1390
        3311 Ser Leu Leu Glu Leu Pro Lys Cys Val Lys Thr Leu Ile Ser Gly Phe
        3312         1395              1400              1405
        3314 Gly Leu Trp Leu Arg Asp Gln Tyr Leu Tyr Ile Lys Lys Leu Ser Thr
        3315    1410              1415              1420
        3317 Phe Leu Phe Phe Asn Pro Val Asp Met Ile Tyr His Asn Gln Ile Met
        3318 1425              1430              1435              1440
E--> 3320 Cys Xaa Met Ser Xaa Asn Ile Phe Phe Asn Asn Xaa Asn Tyr Xaa Arg
        3321              1445              1450              1455
E--> 3323 Lys Asn Lys Ile Thr Ile Pro Ser Xaa Asp Val Leu Tyr Phe Asn Pro
        3324              1460              1465              1470
E--> 3326 Phe Xaa Tyr Arg Phe Thr Asn Lys Lys Asp Tyr Asn Arg Ile Lys Ser
        3327         1475              1480              1485
E--> 3329 Asn Thr Glu Xaa Asn His Ala Phe Asp Leu Ile Arg Lys Ile Ile Phe
        3330    1490              1495              1500
E--> 3332 Leu Ser Tyr Pro Tyr Ala Xaa Leu Tyr Ile Tyr Ile Xaa Ile Ser Thr
        3333 1505              1510              1515              1520
E--> 3335 Ser Lys Xaa Tyr Phe Ile Asn Ile Tyr Gln Asn Lys Lys Ile Asn Ile
        3336              1525              1530              1535
E--> 3338 Ser Ser Ala Ser Cys Ser Lys Cys Lys Asn Leu Asn Xaa Asp Leu Glu
        3339              1540              1545              1550
        3341 His Lys Ile Pro Asn His Tyr Phe Tyr Leu Met Lys Thr Lys Pro Tyr
        3342         1555              1560              1565
        3344 Lys Arg Ile Leu Leu Tyr Ile Tyr Ile Tyr Ile Tyr Tyr Phe Thr Tyr
        3345    1570              1575              1580
        3347 Ser Leu Asp Val Gln His Lys Ser Gly Asn Arg Asn Lys Gly Gly Gly
        3348 1585              1590              1595              1600
E--> 3350 Lys Leu Ala Xaa Ala Glu Glu Thr Phe Arg Arg Ser Glu Gly Asp Thr
        3351              1605              1610              1615
        3353 Arg Leu Glu Leu Ser Leu Tyr Ala Glu Glu Lys Glu Gly Arg Glu Arg
        3354              1620              1625              1630
        3356 Glu Gly Ser Ala Thr Val Asp Arg Ser Cys Pro Gly Ile Val Cys Arg
        3357         1635              1640              1645
        3359 Leu Met Ser Ser Thr Asn Ile Cys Val Asp Arg Trp Gln Gln Met Arg
        3362    1650              1655              1660
E--> 3364 Ser Gly Ile Pro Thr Arg Asn Leu Pro Leu Val Xaa Arg Leu Ile Gln
        3365 1665              1670              1675              1680
        3367 Arg Leu Ala Ser Ala Ile Ser Ser Cys Ala Ser Ser Val Pro Lys Glu
        3368              1685              1690              1695
        3370 Ala Ser Gln Arg Ala Gly Ile His Phe Ser Ile Ala Pro Pro Pro Thr
        3371         1700              1705              1710
        3373 His Thr Thr Thr Thr Thr Thr Thr Ala Lys Glu Asp Glu Gly Leu Val
        3374    1715              1720              1725
        3376 Ala Gly His Phe Tyr Pro Gly Leu Val Ala Arg Arg Leu Arg Arg Ala
        3377    1730              1735              1740
```

Jane

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        3379 Met Arg Lys Ala Ser Arg Gly Gly Ser Leu Pro Arg Arg Ala Val Leu
        3380 1745              1750                1755                1760
E--> 3382 Pro Val Arg Leu Val Arg His Gly Ser Xaa Leu Arg Ser Arg Met Pro
        3383          1765                1770                1775
E--> 3385 Xaa Pro Met Xaa Xaa Leu His Ala Leu Pro Phe His Ser Glu Arg Arg
        3386          1780                1785                1790
E--> 3388 Trp Xaa Xaa Trp Leu Asp His His Leu Leu Pro Leu Xaa Ala Asp Ala
        3389          1795                1800                1805
E--> 3391 Glu Ala Ser Xaa Arg Xaa Ser Xaa Pro Arg Gln Xaa Leu Leu Xaa Val
        3392    1810                1815                1820
E--> 3394 His Arg Leu His Leu Arg Arg Xaa Leu Leu Xaa Arg Val Arg Asp Xaa
        3395 1825              1830                1835                1840
E--> 3397 Xaa Arg Pro Leu His Xaa Xaa Gly Xaa Xaa Gly Phe Leu Gly Xaa Asp
        3398          1845                1850                1855
E--> 3400 Xaa Ser Arg Asp Xaa Xaa Ser Xaa Xaa Leu Pro Arg Leu Val Xaa Xaa
        3401          1860                1865                1870
E--> 3403 Leu Xaa Ile Asp Xaa Xaa Met His Trp Val Xaa His Val Gly Gly Pro
        3404          1875                1880                1885
E--> 3406 Pro Cys Pro Met Ala Xaa Arg Val Gly Leu Leu Leu Arg Pro Xaa Thr
        3407    1890                1895                1900
E--> 3409 Glu Pro Ser Ser Asp Tyr Cys Val Ala Ser Ser Xaa Trp Pro Cys Ala
        3410 1905              1910                1915                1920
E--> 3412 Ala Xaa Xaa Lys Tyr Tyr Gly Arg Ser Pro Ile Gln Ile Ser Phe Asn
        3413          1925                1930                1935
        3415 Tyr Asn Tyr Gly Pro Ala Gly Lys Thr Ile Gly Ser Asp Leu Leu Asn
        3416          1940                1945                1950
        3418 Asn Pro Asp Leu Val Ala Thr Asp Pro Thr Ile Ser Phe Lys Thr Ala
        3419          1955                1960                1965
        3422 Leu Trp Phe Trp Met Thr Pro Gln Ser Pro Lys Pro Ser Cys His Asp
        3423    1970                1975                1980
        3425 Val Ile Thr Gly Ser Trp Thr Pro Ser Asn Ala Asp Arg Ala Ala Gly
        3426 1985              1990                1995                2000
        3428 Arg Leu Pro Gly Tyr Gly Val Thr Thr Asn Ile Ile Asn Gly Gly Leu
        3429          2005                2010                2015
        3431 Glu Cys Gly Lys Gly Ser Asp Ala Arg Val Ala Asp Arg Ile Gly Phe
        3432          2020                2025                2030
E--> 3434 Tyr Xaa Arg Tyr Cys Asp Leu Leu Gly Val Ser Tyr Gly Asp Asn Leu
        3435          2035                2040                2045
E--> 3437 Asp Cys Tyr Asn Xaa Ser Pro Phe Thr Xaa Ser Asp Thr Met Cys Glu
        3438    2050                2055                2060
        3440 Ser Met Arg Asn Lys Arg Tyr Cys Asn Ser Asp Ser Val Ser Leu Lys
        3441 2065              2070                2075                2080
        3443 Leu Arg Arg Lys Ser Ser Ile Lys Ala Lys Leu Asn Lys Phe Met Ala
        3444          2085                2090                2095
        3446 Leu Asn His Arg Ser Ser Ser Asp Ala Ser Ile Lys Cys Leu Gly Val
        3447          2100                2105                2110
E--> 3449 Ser Xaa Cys Val Phe Xaa Arg Ile Glu Asp Val Arg Ile Asn Lys Ile
        3450          2115                2120                2125
E--> 3452 Ile Tyr Phe Leu Leu Ile Phe Tyr Ile Phe Ser Arg Ser Lys Ile Xaa
```

```
        3453    2130                2135                2140
E--> 3455 Leu Gly Phe Tyr Ile Trp Ile Gly Ile Leu Xaa Lys Xaa Xaa Tyr Xaa
     3456 2145                2150                2155                2160
     3458 Asn Tyr Thr Phe Asn Leu Lys Asp Pro Lys Lys Thr Leu Gly Phe Ser
     3459                2165                2170                2175
E--> 3461 Ile Trp Xaa Gly Ile Leu Thr Xaa Xaa Asn Cys Lys Asn Xaa Asn Ile
     3462                2180                2185                2190
E--> 3464 Lys Leu Leu Asn Leu Lys Ile Lys Ile Leu Lys Ile Tyr Xaa Asn His
     3465                2195                2200                2205
E--> 3467 Asp Ile Glu Asn Val Ala Leu Arg Ser Arg Asp Arg Gly Asp Xaa Xaa
     3468    2210                2215                2220
     3470 Gly Asn Tyr Val Asn His Gly Lys Phe Ser Phe Val Ser Lys Thr Met
     3471 2225                2230                2235                2240
E--> 3473 Thr Val Glu Thr His Pro Gln Ser Val Met Gln Pro Cys Tyr His Xaa
     3474                2245                2250                2255
E--> 3476 Thr Cys Arg Arg His Leu Thr Ala Thr Asn His Ser Leu Leu Xaa Arg
     3477                2260                2265                2270
     3479 His Glu Tyr Val Gln Arg Ser Ile Tyr Ile Val Leu His Phe Tyr Thr
     3482    2275                2280                2285
E--> 3484 Val Xaa Glu Val Phe Ala Arg Phe Gly Pro Ser Gln Val His Lys Ile
     3485    2290                2295                2300
     3487 Ile Asp Met Thr Ser Thr Leu Glu Arg Val Asn Pro Arg Ser Ser Gly
     3488 2305                2310                2315                2320
E--> 3490 Gly Ile Gly Leu Ile Xaa Leu Arg Gly Gly Arg Ser Pro Leu Xaa Xaa
     3491                2325                2330                2335
E--> 3493 Pro Leu Ile Leu Asn Xaa Arg Xaa Ile Ser Xaa Gly Asp Arg Ser Pro
     3494                2340                2345                2350
E--> 3496 Leu Glu Leu Xaa Arg Gly Xaa
     3497                2355
     3869 <210> SEQ ID NO: 29
     3870 <211> LENGTH: 1568
     3871 <212> TYPE: PRT
     3872 <213> ORGANISM: Musa acuminata
     3874 <400> SEQUENCE: 29
     3875 Gly Ser Gln Leu Leu Gly Met Asp Leu Lys Ile Leu Val Ile Ser Ser
     3876    1               5               10               15
     3878 Lys Leu Glu Lys Ser Leu Pro Arg Ala Leu Ser Pro Leu Met Thr Ser
     3879               20               25               30
     3881 Val Lys Arg Cys Thr Cys Leu Arg Trp Thr His Leu Val Ser Phe Gly
     3882          35               40               45
     3884 Lys Val Arg Lys Ser Ala Glu Tyr Phe Trp Ile Leu Ser Leu Gly Trp
     3885    50               55               60
     3887 Cys Leu His Glu Pro Gln Glu Ser Ser Lys Tyr Gln Lys Pro Asn His
     3888 65               70               75               80
     3890 Lys Leu Lys Cys Asp Ile His Phe Cys Leu Met His Lys Thr Gly His
     3891               85               90               95
     3893 Ser Pro Leu Cys Leu Lys Gln Lys His Ser Ser Pro Ile His Pro Ile
     3894          100               105               110
     3896 Arg Ser Ser Glu Glu Lys Ile Phe Glu Ile His Phe Arg Gln Thr Lys
```

```
3897          115                 120                 125
3899 Ala Arg Asn Pro Trp Lys Gly Arg Ser Ser Tyr Glu Phe Ser Asn Thr
3902      130                 135                 140
3904 Cys Asn Ser Thr His Thr Val Asp Val Asn Asp Pro His Ala Leu Ser
3905 145                 150                 155                 160
3907 Leu Leu Gly Ile Lys Pro Asn Met Arg Val Ser Leu Ala Leu Ile Pro
3908                  165                 170                 175
3910 Ile Val Arg Ile Arg Val Ala Leu Arg Glu Gly Gly Ser Glu Leu Val
3911              180                 185                 190
3913 Gln Trp Ile Lys Thr Tyr Lys Phe Lys Asn Glu Phe Val Asn Thr Arg
3914          195                 200                 205
3916 Arg Phe Arg Phe Asn Ser Asn Leu Ser Arg Lys Pro Lys Val Asn Ser
3917      210                 215                 220
3919 Ser Val Asn Asn Asn Phe Gly Lys Val Arg Thr His Thr Phe Lys Glu
3920 225                 230                 235                 240
3922 His Thr Asn Leu Lys Trp Phe Gly Gln Asn Asp Leu His Pro Leu Val
3923              245                 250                 255
3925 Lys Pro Ser Ser Lys Arg Leu Pro Thr Ser Thr Ser Lys Ser Leu Arg
3926          260                 265                 270
3928 Gly Arg Thr Asn Thr Ser Leu Thr Thr Phe Tyr Asn Gly Ser Tyr Ser
3929          275                 280                 285
3931 Tyr Lys Phe Ser Thr Arg Lys Lys Glu Val Asn Met Gln Ala Ile Glu
3932      290                 295                 300
3934 Asn Lys Thr Cys Arg Leu Cys Gly Phe Phe Ser Gln Ser Ile Ala Ser
3935 305                 310                 315                 320
3937 Gln Lys Leu Tyr Ser Leu Leu Arg Ile Glu Gly Tyr Leu Thr Pro Arg
3938              325                 330                 335
3940 Gly Phe Lys Phe Gly Leu Gln Ile Ser Asn Ala Leu Gly Phe Pro Arg
3941          340                 345                 350
3943 Leu Pro Val Pro Pro Pro Val Ser Val His Trp Thr Val Tyr Arg Cys
3944      355                 360                 365
3946 His Arg Arg Thr Ser Arg Val Leu Gly Gly Ala Thr Ala Thr Phe Ser
3947      370                 375                 380
3949 Ala His Trp Leu Asp Ser Lys Leu Asp Pro Asn Gln Ser Glu Leu Gly
3950 385                 390                 395                 400
3952 Ser Asn Pro Val Thr Gly Leu Asp Pro Leu Ile Leu Thr Leu Ile Ile
3953              405                 410                 415
3955 Cys Lys Leu Arg Asn Lys Tyr Ser Pro Lys Gln Val Phe Asn Arg Gln
3956          420                 425                 430
3958 Thr Ser Ser Leu Leu Pro Ala Ile Phe Arg Gln Thr Ser Asp Ile Pro
3959          435                 440                 445
3962 Leu Asp Phe Phe Arg Thr Pro Ser Arg Val Pro Ile Leu Trp Arg Val
3963      450                 455                 460
3965 Arg Val Ala Glu Pro Ser Arg Ser Pro Gln Thr Ala Asp Asp Leu Phe
3966 465                 470                 475                 480
3968 Gly Arg Leu Ser Lys Thr Ser Thr Ser Pro Arg Phe Leu Leu Gly Trp
3969              485                 490                 495
3971 Phe Arg Gln His Leu Arg Asn Phe Gly Leu Leu Glu Cys Pro Ser Asn
3972          500                 ·505                510
```

RAW SEQUENCE LISTING
PATENT APPLICATION: **US/09/892,635**

DATE: 03/20/2003
TIME: 11:22:24

Input Set : **A:\pto.amc.txt**
Output Set: **N:\CRF4\03202003\I892635.raw**

```
3974 Leu Thr Pro Val Gly Leu Leu Tyr Ile Phe Arg Leu Ser Leu Ile Leu
3975         515             520             525
3977 His Thr Leu Asn Asn Met Asp Ile Asn Pro Ile Asn Phe His His Gln
3978         530             535             540
3980 Asn Ser Thr Phe Asn Lys His Pro Tyr Ser Ile Thr His Gln Ala Ile
3981 545             550             555             560
3983 Val Thr Leu Ser Thr Val Ile Thr Arg Ser Arg Val Met Ile Gln Val
3984             565             570             575
3986 Val Ser Leu Ile Gly Arg Thr Arg Ile Pro Tyr Pro Asn Pro Val Phe
3987             580             585             590
3989 Ser Thr Leu Leu Ala Tyr Pro Ser Leu Phe Leu Leu Leu Leu Lys Glu
3990             595             600             605
3992 Phe Lys Ser Lys Gln Ile Gln Asn Asn Thr Val Arg His Cys Asp Met
3993         610             615             620
3995 Leu Val Ser Gly Lys His Phe Ala His Pro Gln Thr Ser Ser Ala Ser
3996 625             630             635             640
3998 Ser Pro Thr Phe Ser Tyr Ile Thr Met Ser His Gly Phe Val Asp Asp
3999             645             650             655
4001 Arg Pro Pro Gln Ala Cys Leu Trp Leu Cys Leu Thr Glu Arg Glu Arg
4002         660             665             670
4004 Gln Thr Asp Ser Leu Leu Ile His Tyr Gly Asp Pro Ile Ala Ser Phe
4005         675             680             685
4007 Ala Ala Val Ile Cys Val Pro Asp Ala Cys Ala His Gly Lys Thr Ala
4008         690             695             700
4010 Gly Pro Ala Gln Leu Met His Trp Arg Leu Leu Gly Thr Lys His Arg
4011 705             710             715             720
4013 Arg Gly Lys Leu Ser Arg Cys Leu Cys His Arg Gln Leu Arg Ile Arg
4014             725             730             735
4016 Glu His Arg His Pro Phe Gln Val Trp His Gly Pro Asn Ser Arg Asp
4017         740             745             750
4019 Gln Pro Arg Arg Pro Leu Pro Ser Glu Gln Arg Leu Arg Ala Leu Glu
4022         755             760             765
4024 Gln Arg Asn Pro Val Leu Pro Gly Ala Trp Arg Gln Gly Asp Ala Leu
4025     770             775             780
4027 His Arg Arg Trp Arg Val Leu Trp Pro Glu Phe His Arg Arg Arg Gln
4028 785             790             795             800
4030 Gly Arg Ser Val Ile Pro Leu Ala Gln Phe Leu Gly Trp Phe Cys Cys
4031             805             810             815
4033 Ser Leu Leu Glu Thr Pro Arg Gly Cys Gly Ser Gly Trp His Arg Leu
4034         820             825             830
4036 Gln His Arg Arg Arg Glu His Arg Thr Leu Thr Cys Arg Phe Pro Gln
4037         835             840             845
4039 Gly Leu Gln Arg Ala Gly Gly Arg Asn Glu Glu Ser Ser Leu Glu Cys
4040     850             855             860
4042 Ser Ser Ala Val Ser Phe Pro Gly Leu Leu Ala Trp Gln Arg Thr Gln
4043 865             870             875             880
4045 Asn Arg Ser Leu Arg Leu Arg Val Gly Ala Val Leu Gln Gln Pro Phe
4046             885             890             895
4048 Val Pro Phe Leu Pro Glu Arg Tyr Gln Ser Cys Lys Cys Val Gln Gln
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003
TIME: 11:22:24

Input Set : A:\pto.amc.txt
Output Set: N:\CRF4\03202003\I892635.raw

```
4049                 900                 905                 910
4051 Leu Gly His Val His Pro Cys Ala Lys Ala Val Pro Trp Ala Ser Cys
4052         915                 920                 925
4054 Cys Ser Gly Cys Ser Asn Trp Trp Leu His Ser Thr Pro Ser His Ile
4055         930                 935                 940
4057 Ser Ser Ser Asp Pro Lys Gly Phe Arg Gln Val Arg Arg Asn His Ala
4058 945                 950                 955                 960
4060 Val Asp Ile Pro Arg Gln Lys Leu Arg Leu Gln Phe Ser Ser Gln Val
4061                 965                 970                 975
4063 Pro Arg Val Ser Ser Ala Ser Val Leu Gln His Leu Ile Tyr Ala Gly
4064         980                 985                 990
4066 Glu Val Phe Gln Val Asn Leu Asn Gly Val Asp Asp Arg Trp Ser Lys
4067         995                 1000                1005
4069 Thr Pro Ile Ile Met Gly Pro His Pro Tyr Pro Cys Val Ala Thr Leu
4070    1010                1015                1020
4072 Trp Cys Phe Pro Cys Met Leu Val Phe Ser Ile Ile Gly Val Ser Phe
4073 1025                1030                1035                1040
4075 Thr Phe Pro Tyr Phe Pro Cys Ser Lys Thr Val Tyr Leu Leu Pro Leu
4076             1045                1050                1055
4078 Pro Asn Leu Lys Lys Ile Lys Ile Tyr Asn Lys Tyr Pro Leu Phe Phe
4079             1060                1065                1070
4082 Phe Phe Arg Gln Ile Tyr Asn Ser Leu Ser Gln Leu Phe Lys Gln Lys
4083         1075                1080                1085
4085 Ile Ile Leu Phe His Thr Lys Asp Glu Ser Met Ile Ala Gly Leu Leu
4086    1090                1095                1100
4088 Ser Thr Gly Ala Glu Met Ala Thr Arg Glu Ala Cys Ala Thr Cys Asn
4089 1105                1110                1115                1120
4091 Tyr Lys Phe Val Asn Ile Val Phe Leu Ala Met Phe Gly Asp Ala Ile
4092             1125                1130                1135
4094 Leu Pro Ser Gly His Thr Ser Gly Thr Val Ser Trp Glu Val Asn Leu
4095             1140                1145                1150
4097 Leu Leu Gly Ser Ser Ala Thr Asn Leu Val Arg Phe Phe Ser Met Val
4098         1155                1160                1165
4100 Ser Thr Ser Thr Ser Lys Val Tyr Leu Ser Ala Xaa Pro Gln Phe Arg
4101     1170                1175                1180
4103 Leu Arg Val Gly Ala Val Leu Leu His Arg Gln Leu Ala Asp Ala Arg
4104 1185                1190                1195                1200
4106 Gln Trp Val Leu His Pro Ala Trp Lys Val Phe Pro Gly Leu Pro Ala
4107             1205                1210                1215
4109 Ala Pro Gln Ala Ala Gly Arg Ser Ser Ile Pro Leu Val Ile Leu His
4110             1220                1225                1230
4112 Val Ser Tyr His Gln Glu Leu Gln Val Pro Arg Asp Tyr Asn Lys Lys
4113         1235                1240                1245
4115 Lys Gly Lys Asn Gly Asn Asn Asn Asn Arg Pro Arg Thr Phe Arg Val
4116    1250                1255                1260
4118 Lys Thr Asn Asp Ser Met Arg Arg Phe Ala Met Asp Met Asp Arg Ser
4119 1265                1270                1275                1280
4121 Gln Ser Ser Pro Ser Leu Tyr Glu Pro Val Tyr Arg Phe Ser Leu Gln
4122             1285                1290                1295
```

E--> on line 4100

```
4124  Glu Pro Arg Gly Pro Ala Gln Glu Lys Gln Gln Ile Val Val Ser Phe
4125      1300            1305            1310
E--> 4127  Xaa Tyr Lys Pro Asn Gly Ala Val Arg Gln Met Leu Asn Gly Arg Arg
4128      1315            1320            1325
4130  Ile Asp Leu Gln Ser Lys Ser Glu Glu Asn Arg Ser Gly Pro Pro Thr
4131  1330            1335            1340
4133  Thr Thr His Ala Ile Arg Pro Leu Pro His Pro Leu His Leu Phe Leu
4134  1345            1350            1355            1360
4136  Leu Pro Leu Leu Arg Ser Val Ile Phe Cys Val Tyr Pro Ile Ser Phe
4137            1365            1370            1375
4139  Leu Glu Trp Tyr Pro Ile Leu Ile Ser Ile Val Val Leu Asn His Gln
4142            1380            1385            1390
4144  Phe Trp Phe Lys Arg Met Met Ala Glu Ser Phe Gly Arg Trp Glu Ser
4145            1395            1400            1405
4147  Asp Pro Leu Phe Ser Ala Ala Glu Val Val Gln Asp Ser Ala Asp Arg
4148      1410            1415            1420
4150  Phe Phe Leu Ser Phe Ala Gln Leu Cys Gly His Ser Cys Ala Leu Glu
4151  1425            1430            1435            1440
4153  Asn Leu Leu Tyr Phe Glu Arg Asn Cys Cys Phe Leu Val Leu Ile Ser
4154            1445            1450            1455
4156  Pro Tyr Lys Ile Cys Phe Arg Phe Ile Ser Glu Asn Val Val Ser Ser
4157            1460            1465            1470
4159  Met Thr Ile Leu Phe Asn Ser Asn Thr Leu Ser Cys Phe Leu Phe Asn
4160            1475            1480            1485
4162  Gly Glu Asn Ile Val Pro Phe Ser Asp Leu Cys Ser Pro Asp His Asp
4163      1490            1495            1500
4165  Glu Gly Arg Lys Tyr Phe Leu Val Ile Phe Leu Ser Lys Phe Phe Gln
4166  1505            1510            1515            1520
4168  Thr Arg His Lys Tyr Asn Tyr Arg Pro Arg Leu Ile Leu Leu Met His
4169            1525            1530            1535
4171  Arg Phe Ser Leu Pro Phe Pro Leu Cys Tyr Gly Tyr Arg Cys Tyr Trp
4172            1540            1545            1550
4174  Leu Leu Asn Ser Trp Gly Ser Ala Trp Val Ile Arg Pro Ala Gly Arg
4175            1555            1560            1565
4181  <210> SEQ ID NO: 30
4182  <211> LENGTH: 1574
4183  <212> TYPE: PRT
4184  <213> ORGANISM: Musa acuminata
4186  <400> SEQUENCE: 30
4187  Asp Pro Asn Phe Glu Trp Ile Leu Lys Phe Leu Val Gln Ser Lys Asn
4188  1            5            10            15
4190  Leu Tyr Gln Glu Leu Val His His Pro Asn Gly Val His Val Ser Asp
4191            20            25            30
4193  Gly Leu Thr Trp Phe His Ser Glu Lys Phe Glu Arg Val His Lys Asn
4194            35            40            45
4196  Ile Asp Phe Gly Phe Phe His Ser Val Gly Ala Phe Met Ser Asp Leu
4197      50            55            60
4199  Lys Ser Pro Pro Asn Ile Lys Ser Arg Ile Thr Asn Asn Val Ile Glu
4202  65            70            75            80
```

24,26,29

RAW SEQUENCE LISTING   DATE: 03/20/2003
PATENT APPLICATION: **US/09/892,635**   TIME: 11:22:24

Input Set : **A:\pto.amc.txt**
Output Set: **N:\CRF4\03202003\I892635.raw**

```
       4204 Phe Ile Phe Val Cys Thr Lys Gln Gly Ile His Ser Leu Cys Val Ser
       4205             85                  90                  95
       4207 Lys Asn Ile Leu Leu Arg Phe Ile Pro Phe Ala His Arg Lys Arg Lys
       4208            100                 105                 110
       4210 Phe Leu Lys Ser Ile Phe Asp Asn Arg Pro Lys Leu Glu Ile His Gly
       4211            115                 120                 125
       4213 Asn Glu Glu Asp Pro His Met Ser Phe Pro Ile His Val Ile Arg Leu
       4214         130                 135                 140
E--> 4216 Ile Lys His Arg Trp Met Cys Asn Glu Met Thr Leu Met Xaa Tyr Leu
       4217 145                 150                 155                 160
       4219 Ser Trp Val Leu Asn Gln Ile Glu Ala Leu Leu Tyr Gln Leu Leu Gly
       4220             165                 170                 175
       4222 Ser Glu Trp His Glu Arg Gly Gly Val Asn Cys Ser Gly Leu Lys Leu
       4223             180                 185                 190
       4225 Ile Ser Leu Lys Met Asn Ser Ile Arg Glu Asp Phe Val Leu Ile Val
       4226             195                 200                 205
       4228 Thr Val Asp Glu Asn Gln Lys Leu Thr Val Val Ile Thr Ile Ser Gly
       4229         210                 215                 220
       4231 Lys Glu Leu Thr His Ser Arg Asn Ile Pro Ile Ser Gly Ser Val Lys
       4232 225                 230                 235                 240
       4234 Met Thr Tyr Ile His Leu Ser Leu Leu Arg Arg Gly Ser Gln Leu Pro
       4235             245                 250                 255
E--> 4237 Leu Ala Asn His Phe Glu Gly Glu Gly Gln Ile Pro Leu Leu Xaa Pro
       4238             260                 265                 270
       4240 Phe Thr Met Val His Thr Leu Thr Asn Phe Gln Arg Glu Arg Arg Arg
       4241             275                 280                 285
       4243 Thr Cys Lys Gln Leu Lys Thr Arg Leu Ala Lys Asp Phe Ala Lys Ala
       4244         290                 295                 300
       4246 Phe Phe Leu Asn Leu Leu Leu Leu Lys Ser Cys Ile Leu Cys Glu Leu
       4247 305                 310                 315                 320
       4249 Arg Gly Ile Tyr Arg Pro Gln Glu Asp Leu Asn Leu Gly Ser Lys Phe
       4250             325                 330                 335
       4252 Arg Met Leu Leu Gly Ser Arg Gly Cys Arg Cys His Arg Leu Ser Val
       4253             340                 345                 350
       4255 Phe Asp Thr Gly Gln Cys Thr Ser Gly Ala Thr Ala Gly Pro Leu Gly
       4256             355                 360                 365
       4258 Cys Trp Ala Val Pro Pro Pro Arg Leu Phe Gln Leu Thr Gly Trp Ile
       4259         370                 375                 380
       4262 Pro Asn Leu Thr Gln Thr Ser Pro Asn Ser Gly Pro Ile Asp Pro Pro
       4263 385                 390                 395                 400
       4265 Asp Tyr Arg Ile Asn Pro Ser Pro Leu Tyr Ala Asn Tyr Ala Thr Glu
       4266             405                 410                 415
       4268 Asn Ile Val Leu Ser Lys Phe Leu Thr Gly Lys Arg Arg Val Phe Phe
       4269             420                 425                 430
       4271 Arg Arg Ser Phe Gly Arg Leu Leu Ile Tyr Leu Trp Ile Ser Ser Ser
       4272             435                 440                 445
       4274 Gly Leu Leu Val Gly Ser Arg Ser Cys Gly Glu Phe Ser Glu Pro Asn
       4275             450                 455                 460
       4277 Leu Leu Gly Asp Leu Arg Lys Pro Pro Met Ile Ser Ser Ala Asp Phe
```

Same

RAW SEQUENCE LISTING   DATE: 03/20/2003
PATENT APPLICATION: US/09/892,635   TIME: 11:22:24

Input Set : A:\pto.amc.txt
Output Set: N:\CRF4\03202003\I892635.raw

```
4278 465                   470                475                480
4280 Arg Lys Leu Arg Gln Val Pro Asp Phe Phe Ser Val Gly Ser Asp Ser
4281               485                490               495
4283 Ile Ser Asn Glu Thr Ser Asp Ser Leu Asn Val His Arg Thr Leu Arg
4284               500                505               510
4286 Ala Cys Phe Ile Phe Ser Gly Tyr His Ser Ser Tyr Ile Leu Asn Ser
4287           515                520                525
4289 Ile Ile Trp Ile Arg Leu Ile Asn Pro Ser Ile Asp Phe Ile Ile Lys
4290     530                535                540
4292 Ile Arg His Ser Thr Asn Ile Arg Thr Gln Pro Ile Arg Leu Leu Arg
4293 545                550                555                560
4295 Asp Tyr Leu Leu Ser Val Arg Glu Val Ser Glu Ser Ser Arg Ser Cys
4296               565                570                575
4298 His Leu Leu Ala Glu His Val Ser Leu Ile Gln Ile Gln Ser Ser Gln
4299           580                585                590
4301 Leu Phe Pro Thr Arg Leu Phe Phe Tyr Tyr Phe Lys Asn Ser Asn Gln
4302           595                600                605
4304 Asn Arg Tyr Lys Ile Thr Arg Asp Thr Val Thr Cys Ser Leu Glu Ser
4305     610                615                620
4307 Ile Asn Ser Arg Ile His Arg Arg Arg Gln Leu His His Pro Leu Phe
4308 625                630                635                640
4310 Pro Thr Pro Cys Arg Met Ala Leu Leu Met Thr Asp His His Lys Leu
4311               645                650                655
4313 Ala Phe Gly Cys Ala Gln Arg Glu Arg Asp Arg Pro Ile Ala Ser Ser
4314           660                665                670
4316 Phe Thr Met Ala Ile Arg Ser Pro Ala Ser Leu Leu Leu Phe Ala Phe
4317           675                680                685
4319 Leu Met Leu Ala Leu Thr Gly Arg Leu Gln Ala Arg Arg Ser Ser Cys
4322     690                695                700
4324 Ile Gly Val Tyr Trp Gly Gln Asn Thr Asp Glu Gly Ser Leu Ala Asp
4325 705                710                715                720
4327 Ala Cys Ala Thr Gly Asn Tyr Glu Tyr Val Asn Ile Ala Thr Leu Phe
4328               725                730                735
4330 Lys Phe Gly Met Gly Gln Thr Pro Glu Ile Asn Leu Ala Gly His Cys
4331           740                745                750
4333 Asp Pro Arg Asn Asn Gly Cys Ala Arg Leu Ser Ser Glu Ile Gln Ser
4334           755                760                765
4336 Cys Gln Glu Arg Gly Val Lys Val Met Leu Ser Ile Gly Gly Gly Gly
4337     770                775                780
4339 Ser Tyr Gly Leu Ser Ser Thr Glu Asp Ala Lys Asp Val Ala Ser Tyr
4340 785                790                795                800
4342 Leu Trp His Ser Phe Leu Gly Gly Ser Ala Ala Arg Tyr Ser Arg Pro
4343               805                810               815
4345 Leu Gly Asp Ala Val Leu Asp Gly Ile Asp Phe Asn Ile Ala Gly Gly
4346           820                825                830
4348 Ser Thr Glu His Tyr Asp Glu Leu Ala Ala Phe Leu Lys Ala Tyr Asn
4349           835                840                845
4351 Glu Gln Glu Ala Gly Thr Lys Lys Val His Leu Ser Ala Arg Pro Gln
4352     850                855                860
```

RAW SEQUENCE LISTING   DATE: 03/20/2003
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Input Set : A:\pto.amc.txt
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```
4354 Cys Pro Phe Pro Asp Tyr Trp Leu Gly Asn Ala Leu Arg Thr Asp Leu
4355 865              870              875              880
4357 Phe Asp Phe Val Trp Val Gln Phe Phe Asn Asn Pro Ser Cys His Phe
4358              885              890              895
4360 Ser Gln Asn Ala Ile Asn Leu Ala Asn Ala Phe Asn Asn Trp Val Met
4361              900              905              910
4363 Ser Ile Pro Ala Gln Lys Leu Phe Leu Gly Leu Pro Ala Ala Pro Glu
4364              915              920              925
4366 Ala Ala Pro Thr Gly Gly Tyr Ile Pro Pro His Asp Leu Ile Ser Lys
4367              930              935              940
4369 Val Leu Pro Ile Leu Lys Asp Ser Asp Lys Tyr Ala Gly Ile Met Leu
4370 945              950              955              960
4372 Trp Thr Arg Tyr His Asp Arg Asn Ser Gly Tyr Ser Ser Gln Val Lys
4373              965              970              975
4375 Ser His Val Cys Pro Ala Arg Arg Phe Ser Asn Ile Leu Ser Met Pro
4376              980              985              990
4378 Val Lys Ser Ser Lys Thr Thr Ala Met Ile Gly Gly Arg Lys Leu Arg
4379              995              1000             1005
4382 Ser Ser Trp Val Pro Ile Arg Ile Arg Ala Leu Leu Arg Tyr Gly Val
4383      1010             1015             1020
4385 Ser Leu Val Cys Trp Ser Phe Gln Tyr Asn Lys Gly Leu Val Leu Arg
4386 1025             1030             1035             1040
4388 Phe His Ile Phe His Val Arg Lys Gln Tyr Ile Cys Cys Pro Phe Gln
4389              1045             1050             1055
4391 Ile Lys Arg Asn Lys Tyr Ile Thr Lys Asn Ile Leu Phe Phe Phe Ser
4392              1060             1065             1070
4394 Phe Asp Lys Tyr Ile Thr Leu Asn Phe Pro Asn Cys Leu Ser Lys Arg
4395              1075             1080             1085
4397 Tyr Lys Ser Ser Ser Thr Gln Lys Thr Asn Pro Leu Leu Asp Cys Cys
4398      1090             1095             1100
4400 Leu Leu Val Pro Lys Trp Arg Arg Glu Lys Leu Val Leu Pro Ala Ile
4401 1105             1110             1115             1120
4403 Thr Ser Ser Ser Thr Leu Ser Ser Leu Pro Cys Leu Val Thr Pro Tyr
4404              1125             1130             1135
4406 Ser Arg Asp Gln Asp Thr Pro Leu Glu Gln Phe Leu Gly Lys Leu Ile
4407              1140             1145             1150
4409 Phe Phe Ser Ala Pro Arg Arg Pro Ile Leu Gly Ser Ser Pro Glu Trp
4410      1155             1160             1165
4412 Cys Pro Leu Arg His Arg Arg Ser Thr Ala Xaa Ile His Ser Ser Asp
4413      1170             1175             1180
4415 Tyr Val Trp Val Gln Phe Tyr Tyr Thr Gly Asn Ser Gln Met Pro Gly
4416 1185             1190             1195             1200
4418 Asn Asn Gly Phe Ser Ile Leu His Gly Arg Cys Ser Leu Asp Phe Leu
4419              1205             1210             1215
4421 Leu Leu Leu Arg Leu Leu Glu Gly Ala Pro Phe His Ser Tyr Thr Cys
4422              1220             1225             1230
4424 Leu Ile Ile Lys Asn Tyr Ser Lys Tyr Arg Gly Ile Ile Lys Ile Lys
4425              1235             1240             1245
4427 Lys Lys Gly Arg Met Gly Ile Arg Ile Lys Thr Glu Thr Gly His Glu
```

E--> (line 4412)

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Input Set : A:\pto.amc.txt
Output Set: N:\CRF4\03202003\I892635.raw

```
4428    1250            1255            1260
4430 Glu Arg Phe Glu Arg Gln Thr Thr Val Asp Gly Ser Leu Leu Trp Thr
4431 1265            1270            1275            1280
4433 Trp Ile Val Pro Lys Ala Val Gln Val Phe Met Asn Arg Ser Ile Gly
4434            1285            1290            1295
4436 Ser Ala Phe Lys Asn Arg Glu Asp Asn Arg Pro Lys Arg Asn Asn Lys
4437    1300            1305            1310
E--> 4439 Leu Trp Ala Phe Xaa Ile Asn Arg Thr Val Pro Ser Val Arg Cys Met    some
4442    1315            1320            1325
4444 Asp Gly Gly Ile Ser Arg Val Asn Leu Arg Lys Ile Val Pro Ala Pro
4445    1330            1335            1340
4447 Leu Pro Arg Pro Thr Arg Ser Val Leu Ser Pro Thr Pro Tyr Thr Phe
4448 1345            1350            1355            1360
4450 Phe Phe Phe Arg Ser Cys Asp Arg Leu Phe Asp Phe Val Tyr Asp Ile
4451            1365            1370            1375
4453 Gln Phe Leu Phe Trp Ser Gly Ile Leu Phe Phe Leu Arg Leu Leu Tyr
4454            1380            1385            1390
4456 Thr Ile Ser Phe Gly Leu Ser Ala Trp Arg Arg Val Ser Gly Asp Gly
4457    1395            1400            1405
4459 Ser Gln Ile Pro Cys Phe Leu Leu Pro Lys Trp Cys Lys Ile Arg Pro
4460    1410            1415            1420
4462 Ile Gly Phe Phe Ser His Phe Lys Leu Asn Tyr Ala Val Ile Leu Val
4463 1425            1430            1435            1440
4465 Arg Leu Trp Arg Ile Cys Ser Ile Ser Lys Glu Ile Ala Ala Phe Phe
4466            1445            1450            1455
4468 Leu Val Pro Ile Lys Phe Ala Phe Gly Ser Glu Tyr Pro Arg Met Ser
4469            1460            1465            1470
4471 Tyr Arg Gln Arg Phe Phe Phe Arg Ile Leu Ile Leu Cys Pro Val Phe
4472            1475            1480            1485
4474 Cys Asp Leu Met Glu Lys Ile Leu Phe Leu Leu Val Ile Tyr Ala Leu
4475    1490            1495            1500
4477 Pro Thr Ile Arg Met Arg Val Glu Gly Glu Asn Thr Phe Trp Phe Ser
4478 1505            1510            1515            1520
4480 Ser Leu Asn Ser Ser Lys His Asp Thr Ser Ile Ile Ile Asp Gln Asp
4481            1525            1530            1535
4483 Phe Phe Leu Cys Thr Asp Ser His Phe Pro Ser Leu Cys Val Met Val
4484            1540            1545            1550
4486 Ile Val Val Thr Asp Gly Cys Leu Thr His Gly Val Ala Pro Gly Ser
4487    1555            1560            1565
4489 Val Asp Leu Gln Val Asp
4490    1570
4493 <210> SEQ ID NO: 31
4494 <211> LENGTH: 1562
4495 <212> TYPE: PRT
4496 <213> ORGANISM: Musa acuminata
4498 <400> SEQUENCE: 31
4499 Arg Ile Pro Thr Phe Arg Asn Gly Ser Asn Phe Ser Tyr Lys Phe Lys
4502 1            5            10            15
4504 Val Arg Lys Ile Phe Thr Lys Ser Phe Glu Ser Ile Asp Asp Ile Arg
```

pp 28,30-31

```
                        20                    25                    30
4505
4507  Glu Thr Val Tyr Met Ser Pro Met Asp Ser Leu Gly Phe Ile Arg Lys
4508       35                    40                    45
4510  Ser Ser Lys Glu Cys Ile Arg Ile Leu Ile Leu Asp Ser Phe Thr Arg
4511            50                    55                    60
4513  Leu Val Pro Ser Val Thr Ser Arg Val Leu Gln Ile Ser Lys Ala Glu
4514  65                    70                    75                    80
4516  Ser Gln Ile Glu Met Leu Asn Ser Phe Leu Ser Asn Ala Gln Asn Arg
4517                      85                    90                    95
4519  Ala Phe Ile Ala Phe Val Phe Lys Ala Lys Thr Phe Phe Ser Asp Ser
4520                 100                   105                   110
4522  Ser His Ser Leu Ile Gly Arg Glu Asn Phe Asn Pro Phe Ser Thr Ile
4523            115                   120                   125
4525  Asp Gln Ser Ser Lys Ser Met Glu Met Arg Lys Ile Leu Ile Val Phe
4526       130                   135                   140
4528  Gln Tyr Met Phe Asp Ser Leu Asn Ile Gly Gly Cys Val Met Lys Pro
4529  145                   150                   155                   160
E--> 4531 Ser Cys Xaa Ile Ser Leu Gly Tyr Thr Lys Tyr Glu Ser Glu Pro Cys
4532                 165                   170                   175
4534  Ser Asp Thr Asn Cys Asp Gln Ser Gly Thr Lys Arg Gly Gly Glu Ile
4535            180                   185                   190
4537  Ser Ala Val Asp Asn Leu Val Lys Ile Arg Lys Tyr Glu Lys Ile Ser
4538            195                   200                   205
4540  Phe Leu Glu Met Lys Thr Lys Ser Gln Cys Lys Gln Phe Arg Glu Ser
4541       210                   215                   220
4543  Lys Asn Ser His Ile Gln Gly Thr Tyr Gln Phe Lys Val Val Arg Ser
4544  225                   230                   235                   240
4546  Lys Pro Thr Ser Thr Cys Glu Ala Phe Phe Glu Glu Ala Pro Asn Phe
4547            245                   250                   255
E--> 4549 His Gln Ile Thr Leu Lys Gly Lys Asp Lys Tyr Leu Ser Tyr Xaa Leu
4550            260                   265                   270
4552  Leu Gln Trp Phe Ile Leu Leu Gln Ile Phe Asn Glu Lys Glu Gly Gly
4553       275                   280                   285
4555  Glu His Ala Ser Asn Lys Gln Asp Leu Leu Lys Thr Leu Leu Arg Leu
4556       290                   295                   300
4558  Phe Phe Ser Ile Tyr Cys Phe Ser Lys Val Val Phe Ser Ala Glu Asn
4559  305                   310                   315                   320
4562  Gly Val Phe Ile Asp Pro Lys Arg Ile Ile Trp Ala Pro Asn Phe Glu
4563                 325                   330                   335
4565  Cys Ser Trp Val Pro Glu Val Ala Gly Ala Thr Ala Cys Gln Cys Leu
4566            340                   345                   350
4568  Thr Leu Asp Ser Val Leu Ala Val Pro Pro Pro Asp Leu Ser Gly Val
4569            355                   360                   365
4571  Gly Arg Cys His Arg Leu Asp Phe Phe Ser Ser Leu Val Gly Phe Gln
4572       370                   375                   380
4574  Thr Pro Lys Pro Val Arg Thr Arg Val Gln Leu Thr Arg Asn Arg Ile
4575  385                   390                   395                   400
4577  Ile Gly Leu Thr Leu Asn Pro Asn Pro Asn Tyr Met Gln Thr Thr Gln
4578            405                   410                   415
```

Input Set : A:\pto.amc.txt
Output Set: N:\CRF4\03202003\I892635.raw

```
4580 Leu Lys Ile Ser Ala Ser Phe Pro Ala Asn Val Glu Ser Ser Ser Gly
4581         420             425             430
4583 Asp Leu Ser Ala Asp Phe Tyr Thr Phe Gly Phe Leu Leu Ala Asp Ser
4584         435             440             445
4586 Gly Pro Asp Leu Val Ala Ser Leu Ala Ser Ser Arg Thr Phe Ser Val
4587     450             455             460
4589 Ile Ser Ala Asn Arg Arg Ser Leu Arg Gln Thr Phe Glu Asn Phe Asp
4590 465             470             475             480
4592 Lys Ser Pro Ile Ser Ser Arg Leu Val Pro Thr Ala Ser Leu Thr Lys
4593             485             490             495
4595 Leu Arg Thr Pro Met Ser Ile Glu Leu Asp Ser Gly Arg Leu Ala Leu
4596         500             505             510
4598 Tyr Phe Gln Ala Ile Ile Val Asn Pro Thr Tyr Leu Thr Gln Tyr Gly
4599     515             520             525
4601 Leu Asp Leu Thr His Gln Leu Ile Ser Ser Ser Lys Phe Asp Ile Gln
4602     530             535             540
4604 Gln Thr Ser Val Leu Asn Asn Pro Ser Gly Tyr Ser Tyr Val Thr Ile
4605 545             550             555             560
4607 Tyr Cys Asp Pro Tyr Val Lys Leu Ala Ser His Asp Pro Gly Arg Val
4608             565             570             575
4610 Thr Tyr Trp Pro Asn Thr Tyr Pro Leu Ser Lys Ser Ser Leu Leu Asn
4611         580             585             590
4613 Ser Ser Ser Leu Pro Val Ser Phe Phe Ile Thr Phe Glu Arg Ile Gln
4614     595             600             605
4616 Ile Lys Thr Asp Thr Lys His Gly Glu Thr Leu His Ala Ser Leu Trp
4617     610             615             620
4619 Lys Ala Leu Ile Arg Ala Ser Thr Asp Val Val Ser Phe Ile Thr His
4622 625             630             635             640
4624 Phe Phe Leu His Asn His Val Ala Trp Leu Cys Gln Thr Thr Thr Ser
4625             645             650             655
4627 Leu Pro Leu Val Val Pro Asn Arg Glu Arg Glu Thr Asp Arg Pro Pro
4628             660             665             670
4630 His Ser Leu Trp Arg Ser Asp Arg Gln Leu Arg Cys Cys Tyr Leu Arg
4631         675             680             685
4633 Ser Cys Leu Arg Ser Arg Glu Asp Cys Arg Pro Gly Ala Ala His Ala
4634     690             695             700
4636 Leu Ala Ser Thr Gly Lys Thr Pro Thr Arg Glu Ala Gln Met Leu Val
4637 705             710             715             720
4639 Pro Gln Ala Thr Thr Asn Thr Thr Ser Pro Pro Phe Ser Ser Leu Ala
4640             725             730             735
4642 Trp Ala Lys Leu Gln Arg Ser Thr Ser Pro Ala Thr Val Thr Leu Gly
4643         740             745             750
4645 Thr Thr Ala Ala Arg Ala Ala Ala Lys Ser Ser Pro Ala Arg Ser Val
4646         755             760             765
4648 Ala Ser Arg Cys Ser Pro Ser Glu Val Ala Gly Leu Met Ala Val Pro
4649     770             775             780
4651 Pro Lys Thr Pro Arg Thr Arg His Thr Ser Gly Thr Val Ser Trp Val
4652 785             790             795             800
4654 Val Leu Leu Leu Ala Thr Arg Asp Pro Ser Gly Met Arg Phe Trp Met
```

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PATENT APPLICATION: US/09/892,635

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Input Set : A:\pto.amc.txt
Output Set: N:\CRF4\03202003\I892635.raw

```
4655                    805            810            815
4657 Ala Thr Ser Thr Ser Pro Glu Gly Ala Gln Asn Thr Met Met Asn Leu
4658          820            825            830
4660 Pro Leu Ser Ser Arg Pro Thr Thr Ser Arg Arg Pro Glu Arg Arg Lys
4661          835            840            845
4663 Phe Thr Val Leu Val Arg Ser Val Leu Ser Arg Ile Thr Gly Leu Ala
4664     850            855            860
4666 Thr His Ser Glu Gln Ile Ser Ser Thr Ser Cys Gly Cys Ser Ser Ser
4667 865            870            875            880
4669 Thr Thr Leu Arg Ala Ile Ser Pro Arg Thr Leu Ser Ile Leu Gln Met
4670          885            890            895
4672 Arg Ser Thr Ile Gly Ser Cys Pro Ser Leu Arg Lys Ser Cys Ser Leu
4673          900            905            910
4675 Gly Phe Leu Leu Leu Leu Arg Leu Leu Gln Leu Val Ala Thr Phe His
4676          915            920            925
4678 Pro Met Ile Ser Tyr Leu Lys Phe Phe Arg Ser Arg Ile Pro Thr Ser
4679     930            935            940
4682 Thr Gln Glu Ser Cys Cys Gly Leu Asp Thr Thr Thr Glu Thr Pro Ala
4683 945            950            955            960
4685 Thr Val Leu Lys Ser Ser Pro Thr Cys Val Gln Arg Val Gly Ser Pro
4686          965            970            975
4688 Thr Ser Tyr Leu Cys Arg Ser Leu Pro Ser Lys Pro Glu Arg Arg Arg
4689          980            985            990
4691 Ser Val Val Glu Asn Ser Asp His His Gly Ser Pro Ser Val Ser Val
4692          995            1000           1005
4694 Arg Cys Tyr Val Met Val Phe Pro Leu Tyr Val Gly Leu Phe Asn Asn
4695     1010           1015           1020
4697 Ile Ile Arg Gly Phe Tyr Val Ser Ile Phe Ser Met Phe Glu Asn Ser
4698 1025           1030           1035           1040
4700 Ile Phe Ala Ala Pro Ser Lys Phe Glu Lys Asp Lys Ile Asn Ile Leu
4701          1045           1050           1055
4703 Lys Ile Ser Ser Phe Phe Phe Leu Ser Thr Asn Ile Leu Leu Thr Phe
4704          1060           1065           1070
4706 Pro Ile Val Ala Lys Asp Ile Asn Pro Leu Pro His Lys Arg Arg Ile
4707     1075           1080           1085
4709 His Asp Cys Trp Ile Ala Val Tyr Trp Cys Arg Asn Gly Asp Glu Arg
4710     1090           1095           1100
4712 Ser Leu Cys Tyr Leu Gln Leu Gln Val Arg Gln His Cys Leu Pro Cys
4713 1105           1110           1115           1120
4715 His Val Trp Arg His Thr Pro Val Ile Arg Thr His Leu Trp Asn Ser
4716          1125           1130           1135
4718 Phe Leu Gly Ser Ser Ser Ser Arg Leu Leu Gly Asp Gln Ser Cys Glu
4719          1140           1145           1150
4721 Val Leu Leu Leu Asn Gly Val His Phe Asp Ile Glu Gly Leu Pro Glu
4722          1155           1160           1165
E--> 4724 Arg Xaa Ser Thr Val Pro Thr Thr Cys Gly Cys Ser Ser Thr Thr Gln
4725     1170           1175           1180
4727 Ala Thr Arg Arg Cys Pro Val Thr Met Gly Ser Pro Ser Cys Met Glu
4728 1185           1190           1195           1200
```

```
     4730 Gly Val Pro Trp Thr Ser Cys Cys Ser Ser Gly Cys Trp Lys Glu Leu
     4731          1205              1210              1215
     4733 His Ser Thr Ser Asp Leu Thr Arg Val Leu Ser Ser Arg Ile Ile Ala
     4734          1220              1225              1230
     4736 Ser Thr Glu Gly Leu Leu Lys Lys Lys Arg Glu Glu Trp Glu Leu Glu
     4737          1235              1240              1245
     4739 Leu Lys Leu Lys Pro Ala Met Lys Asn Val Ser Ser Glu Asp Lys Arg
     4742     1250              1255              1260
     4744 Gln Tyr Glu Thr Val Val Cys Tyr Gly His Gly Ser Phe Pro Lys Gln
     4745 1265              1270              1275              1280
     4747 Ser Lys Ser Leu Thr Gly Leu Ser Val Gln Pro Ser Arg Thr Ala Arg
     4748          1285              1290              1295
E--> 4750 Ile Thr Gly Pro Arg Glu Thr Thr Asn Cys Gly Glu Leu Leu Xaa Thr
     4751          1300              1305              1310
     4753 Glu Arg Cys Arg Pro Ser Asp Val Lys Trp Thr Ala Asp Arg Ser Pro
     4754          1315              1320              1325
     4756 Glu Ile Gly Lys Ser Phe Arg Pro Pro Tyr His Asp Pro Arg Asp Pro
     4757     1330              1335              1340
     4759 Ser Ser Pro Pro Pro Pro Thr Pro Phe Ser Ser Ser Ala Pro Ala Ile
     4760 1345              1350              1355              1360
     4762 Gly Tyr Leu Ile Leu Cys Met Ile Ser Asn Phe Phe Ser Gly Val Val
     4763          1365              1370              1375
     4765 Ser Tyr Ser Asn Phe Leu Asp Cys Cys Ile Glu Pro Ser Val Leu Val
     4766          1380              1385              1390
     4768 Ala His Asp Gly Gly Glu Phe Arg Glu Met Gly Val Arg Ser Leu Val
     4769          1395              1400              1405
     4771 Phe Cys Cys Arg Ser Gly Ala Arg Phe Gly Arg Val Phe Ser Leu Ile
     4772     1410              1415              1420
     4774 Leu Ser Ser Ile Met Arg Ser Phe Leu Leu Gly Phe Gly Glu Phe Ala
     4775 1425              1430              1435              1440
     4777 Leu Phe Arg Lys Lys Leu Leu Leu Ser Ser Phe Asp Ser Leu Asn Leu
     4778          1445              1450              1455
     4780 Leu Ser Val Leu Asn Ile Arg Glu Cys Arg Ile Val Asn Asp Asp Ser
     4781          1460              1465              1470
     4783 Phe Leu Glu Phe Tyr Phe Val Leu Phe Ser Val Ile Trp Arg Lys Tyr
     4784          1475              1480              1485
     4786 Cys Ser Phe Ser Met Leu Ser Arg Pro Leu Gly Gly Leu Lys Val Lys
     4787     1490              1495              1500
     4789 Ile Leu Ser Gly Asn Phe Pro Leu Ile Leu Pro Asn Thr Thr Gln Val
     4790 1505              1510              1515              1520
     4792 Leu Thr Lys Ile Asp Ser Ser Tyr Ala Pro Ile Leu Thr Ser Leu Pro
     4793          1525              1530              1535
     4795 Ser Val Leu Trp Leu Ser Leu Leu Leu Met Val Ala Leu Met Gly Arg
     4796          1540              1545              1550
     4798 Leu Gly Asp Pro Leu Thr Cys Arg Ser Thr
     4799          1555              1560
     4993 <210> SEQ ID NO: 34
     4994 <211> LENGTH: 758
     4995 <212> TYPE: PRT
```

```
4996 <213> ORGANISM: Musa acuminata
4998 <400> SEQUENCE: 34
4999 Ser Leu Val Arg Gly Pro Pro Arg Gly Arg Arg Tyr Arg Ala Leu Ile
5000  1               5                  10                  15
5002 Ser Ser Leu Asn Leu Ser Leu Ser Leu Ser Leu Ser Leu Ser Leu Tyr
5003             20                  25                  30
5005 Val Phe Lys Tyr Gly Cys Asn Ala Glu Leu Leu Cys Leu Ser Trp Pro
5006         35                  40                  45
5008 Asn Cys Val His Leu Ala Asp Lys Ser Gly Asp Asn Val Leu Phe Thr
5009     50                  55                  60
5011 Glu Ser Thr Ala Gly Gly Pro Glu Ile Thr Ser Asp Ala His Trp Val
5012 65                  70                  75                  80
5014 Met Met Ile Trp Thr Pro Pro Gln Arg Ala Ala Met Gly Cys Glu Ile
5015             85                  90                  95
5017 His Ile Ala Ala Ile Arg Glu Ala Arg Asn Thr Arg Leu Leu Leu Phe
5018         100                 105                 110
5020 Gln Arg Ser Lys Gly Gln Ala Thr Val Thr Ile Asp Phe Phe Glu His
5021         115                 120                 125
5023 Asp Asp Asn Asp Asp Leu Leu Leu Gln Tyr Pro Ser Pro Thr Val Glu
5024     130                 135                 140
5026 Trp Glu Met Gly Leu Leu His Tyr Phe Ser Gln Glu Leu Ile Glu Ser
5027 145                 150                 155                 160
5029 Pro Ala Asn Cys Cys Phe Ser Phe Leu Ile Leu Asn Leu Pro Pro Val
5030             165                 170                 175
5032 Thr Leu Lys Leu His Val Lys Thr Phe Leu Tyr Gly Ser Glu His Glu
5033         180                 185                 190
5035 Ile Tyr His Ser Asn Gly Asp Leu His Tyr His His His His His Leu
5036     195                 200                 205
5038 His Gly Phe Gly Ser Asn Thr Glu Asn Leu Ile Asn Pro Thr Pro Ile
5039     210                 215                 220
5042 Leu Ala Leu Ala Pro Ser Pro Arg Lys Ile Gln Gln Glu Gln Gln Lys
5043 225                 230                 235                 240
5045 Phe Arg Met His Ile Glu Leu Ile Trp Ser Leu Glu Asn His Gly Leu
5046             245                 250                 255
5048 Lys Ile Leu Lys Ile Asn His Asn His Leu Leu Thr Leu Thr Ile His
5049         260                 265                 270
5051 Ile Leu Ser Thr Lys Phe Asp Ile Gly Phe Leu Ile Ser Tyr Ile Arg
5052         275                 280                 285
5054 Phe Lys Ile Ser Pro Phe Asp Arg Ile Asn Ile Ser Phe Asn Ser Leu
5055     290                 295                 300
5057 Gly Lys Asp Leu Ile Tyr Ile Tyr Ile Tyr Ile Phe Ile Tyr Ile Leu
5058 305                 310                 315                 320
5060 Thr Ile Ser Leu Thr Arg Ile Ile Asp Gly His Ile Cys Lys Asn Pro
5061             325                 330                 335
5063 Pro Ile Val His Ser Lys Arg Ser Leu Asn Gly Arg Asn Tyr Phe Ile
5064         340                 345                 350
5066 Ser Arg Asp Phe Gln Asn Ile Leu Val Ser Phe Thr Val Met Met Leu
5067     355                 360                 365
5069 Arg Met Ile Arg Trp Lys Asp Ala Cys Val Ser Arg Leu Arg Ser Leu
```

Input Set : A:\pto.amc.txt
Output Set: N:\CRF4\03202003\I892635.raw

```
5070      370                    375                   380
5072 Trp Arg Gly Arg Asp Glu Asp Lys Asp Val Ser Gly Arg Tyr Gln Val
5073 385                  390                   395                   400
5075 Phe Ser Ser Pro Thr Thr His Val Ser Asp Ser Arg Tyr Gly Leu Ser
5076                  405                   410                   415
5078 Arg Trp Arg Val Asp Cys Thr Asp Glu Arg Val Asn Ala His Pro Pro
5079              420                   425                   430
5081 Ser Phe Ile Leu Ser Leu Cys Val Cys Glu Arg Ser Ala Tyr Lys Ala
5082          435                   440                   445
5084 Arg Asn Lys Pro Leu Phe Ser Pro Arg Thr His His Thr Ile His Thr
5085      450                   455                   460
5087 Leu His Pro Leu Leu Leu Arg Ala Phe Ser Pro Ser Phe Leu Val Pro
5088 465                   470                   475                   480
5090 Cys Arg Pro Ala Ala Thr Ala Thr Ala Leu Thr Arg Ala Ser Ala Cys
5091              485                   490                   495
5093 Lys Ser Ser Ser Ile Pro Pro Pro Leu Leu Leu Leu Leu Leu Leu Leu
5094              500                   505                   510
5096 Leu Leu Thr Ser Pro Arg Leu Cys Leu Met Ser Arg Leu Phe Pro His
5097          515                   520                   525
5099 Arg Ser Ser Lys Leu Arg Ala Leu Leu Gly Asn Ile Ser Asn Thr Ile
5102      530                   535                   540
E--> 5104 Cys Ile Cys Xaa Arg Ser Thr Leu Ala Glu Glu Leu Gly Phe Ala Phe
5105 545                   550                   555                   560
5107 Ala Gly Arg Lys Glu Thr Ala Thr Val Ser Ile Leu Leu Arg Pro Arg
5108              565                   570                   575
5110 Arg Gly Thr Asp Leu Leu Leu Pro Pro Pro Arg Arg Gly Ser Asn Leu
5111          580                   585                   590
5113 Gly Leu His Leu Ile Thr Leu Pro Asn Ala Phe Ser Val Phe Val Ser
5114      595                   600                   605
5116 Ser Leu Gln Leu Arg Arg Arg Gly Asp Arg Cys Arg Arg Ser Cys Arg
5117      610                   615                   620
5119 Ala Arg Gln Val Gln Val Arg Arg Arg Leu Arg Leu His Arg Leu Gln
5120 625                   630                   635                   640
5122 Val Trp Gln Leu Arg Ser Thr Cys Val Thr Thr Thr Lys Lys Phe Ala
5123              645                   650                   655
5125 Met His Lys Lys Gln Lys Asn Lys Lys Lys Lys Gly Arg Arg Arg Arg
5126          660                   665                   670
5128 Cys Tyr Val Leu Phe Gly Gln Ala Asp Arg Leu Asp Gly Ile Thr Gln
5129          675                   680                   685
5131 Tyr His Leu Cys Tyr Leu Cys Pro Val Leu Gln Leu Ser Tyr Leu Ser
5132      690                   695                   700
5134 Ser Met Lys Tyr Tyr Tyr Ser Gly Cys Val Ile His Ile Cys Cys Cys
5135 705                   710                   715                   720
5137 Cys Cys Cys Phe Leu Phe His Gln Ser Thr Gln Arg Ile Asp Cys Thr
5138              725                   730                   735
5140 Val Arg Pro Asn Phe Leu Thr Asp Met Leu Ala Gln Leu Arg Met Asn
5141          740                   745                   750
5143 Ser Asn Gln Thr Ser Leu
5144      755
```

```
5147 <210> SEQ ID NO: 35
5148 <211> LENGTH: 758
5149 <212> TYPE: PRT                           p35
5150 <213> ORGANISM: Musa acuminata
5152 <400> SEQUENCE: 35
5153 His Trp Tyr Gly Ala Pro Leu Glu Val Asp Gly Ile Asp Lys Leu Ser
5154  1               5                  10                  15
5156 Leu Leu Ser Ile Ser Leu Ser Leu Ser Leu Ser Leu Ser Leu Cys Met
5157              20                  25                  30
5159 Ser Leu Asn Met Val Val Met Leu Asn Cys Tyr Val Tyr Leu Gly Gln
5162          35                  40                  45
5164 Thr Val Ser Ile Phe Glu Gln Ile Asn Leu Ala Ile Met Phe Phe Leu
5165      50                  55                  60
5167 Leu Lys Ala Leu Gln Asp Glu Gly Leu Lys Ser His Arg Thr Pro Thr
5168 65                  70                  75                  80
5170 Gly Ser Tyr Gly Leu Leu His Ser Glu Gln Pro Trp Asp Val Arg Ser
5171              85                  90                  95
5173 Thr Gln Arg Arg Gly Lys Pro Ala Thr Leu Gly Cys Cys Cys Ser Ser
5174             100                 105                 110
5176 Lys Asp Arg Lys Val Arg Arg Gln Arg Ser Thr Phe Ser Ser Met Met
5177         115                 120                 125
5179 Thr Thr Thr Thr Cys Ser Cys Asn Ile Arg Pro Leu Pro Ser Gly Asn
5180     130                 135                 140
5182 Lys Trp Val Cys Ser Cys Thr Ile Ser Arg Arg Asn Leu Lys Ala Leu
5183 145                 150                 155                 160
5185 Gln Ile Ala Val Ser Leu Ser Leu Tyr Thr Phe Leu Leu Leu His Asn
5186             165                 170                 175
5188 Cys Met Leu Arg His Phe Cys Met Asp Pro Asn Met Arg Ser Ile Ile
5189         180                 185                 190
5191 Glu Val Met Gly Arg Ile Tyr Ile Ile Ile Ile Ile Ile Ile Ser Met
5192         195                 200                 205
5194 Gly Leu Asp Leu Ile Arg Pro Lys Thr Ser Phe Lys Ile Gln Pro Gln
5195     210                 215                 220
5197 Tyr Trp Leu Asp Leu Leu His Leu Gln Glu Lys Tyr Asn Lys Asn Asn
5198 225                 230                 235                 240
5200 Lys Asn Leu Gly Cys Thr Leu Asn Phe Gly His Tyr Glu Arg Ile Met
5201             245                 250                 255
5203 Asp Lys Tyr Asn Lys Lys Ile Ile Ile Ile Tyr Ser Leu Arg Phe Thr
5204         260                 265                 270
5206 Phe Tyr Pro Pro Asn Leu Thr Ser Ala Ser Asn Phe His Ile Leu Gly
5207         275                 280                 285
5209 Ser Lys Lys Ser Leu Pro Leu Thr Asp Glu Ile Phe Leu Leu Ile Arg
5210     290                 295                 300
5212 Gly Arg Ile Tyr Asn Ile Tyr Ile Tyr Ile Tyr Leu Phe Ile Arg Phe
5213 305                 310                 315                 320
5215 Pro Phe Leu Ser Pro Glu Tyr Glu Ser Thr Ala Ile Ser Ala Lys Thr
5216             325                 330                 335
5218 His Gln Leu Phe Thr Val Asn Ala His Ile Lys Val Glu Ile Thr Phe
5219             340                 345                 350
```

```
5222 Lys Phe Leu Glu Ile Ser Asn Lys Ile Tyr Ser Tyr Leu Leu Gln Cys
5223         355                 360             365
5225 Ser Gly Asp Gly Arg Met Arg Val Ser Ala Ala Cys Asp Leu Cys Gly
5226         370             375             380
5228 Gly Asp Glu Thr Lys Thr Arg Thr Ala Asp Asp Thr Lys Ser Ser Pro
5229 385             390             395                 400
5231 Pro Pro Pro Arg Thr Ser Gln Ile Pro Asp Thr Ala Tyr Pro Gly Gly
5232             405             410             415
5234 Val Trp Thr Ala Gln Thr Asn Glu Met Pro Ile Pro Pro Leu Ser Phe
5235         420             425             430
5237 Phe Leu Phe Ala Cys Val Arg Gly Ala Pro Ile Asn Lys His Glu Thr
5238         435             440             445
5240 Ser Pro Phe Ser Leu Gln Glu His Thr Thr Pro Phe Thr His Tyr Ile
5241     450             455                 460
5243 Leu Cys Phe Phe Glu Pro Phe Arg Leu Pro Ser Ser Ser Asn His Val
5244 465             470             475                 480
5246 Asp Leu Arg Gln Leu Arg Leu Arg Gln Glu Pro Val Arg Val Ser His
5247             485             490                 495
5249 Pro Pro Ser Leu His Leu Phe Phe Phe Phe Phe Phe Phe Phe Pro Arg
5250             500             505             510
5252 Pro Val Cys Val Val Asp Ser Ser His Ile Ala Arg Gln Asn Ser Glu
5253         515             520             525
E--> 5255 Leu Tyr Gly Thr Ser Ala Ile Leu Tyr Val Tyr Val Xaa Gly Gln Arg
5256     530             535                 540
5258 Trp Leu Lys Asn Leu Val Leu Pro Leu Gln Glu Glu Arg Lys Gln Leu
5259 545             550             555                 560
5261 Arg Tyr Arg Tyr Cys Asp Arg Glu Glu Val Leu Ile Ser Phe Phe Ser
5262             565             570             575
5264 Leu Leu Leu Val Glu Asp Asp Gln Thr Asn Asp Tyr Thr Leu Leu Pro
5265         580             585             590
5267 Tyr Leu Met Leu Phe Pro Val Ser Phe Arg Leu Phe Ser Tyr Val Asp
5268         595             600             605
5270 Glu Val Ile Val Ala Ala Glu Ala Ala Glu His Asp Gly Lys Cys Lys
5271     610             615             620
5273 Cys Gly Ala Ala Cys Ala Cys Thr Asp Cys Lys Cys Gly Asn Glu Ala
5274 625             630             635                 640
5276 Leu Val Ser Leu Pro Leu Asn Asn Lys Ser Leu Gln Cys Ile Lys Asn
5277             645             650             655
5279 Lys Arg Thr Lys Lys Lys Lys Glu Glu Glu Glu Gly Val Ala Met Tyr
5282             660             665             670
5284 Ser Asn Asn Ser Gly Arg Leu Ile Gly Cys Lys Met Gly Arg Ser Ile
5285         675             680             685
5287 Ile Cys Val Ile Ser Val Leu Cys Tyr Asn Ser Pro Ile Tyr Pro Ser
5288     690             695             700
5290 Gln Asn Ile Ile Ser Ile Asn Leu Val Val Ser Phe Ile Tyr Ala Ala
5291 705             710             715                 720
5293 Ala Ala Ala Ala Ser Ser Phe Thr Asn Gln Pro Lys Gly Ser Ile Ala
5294             725             730             735
5296 Leu Gly Pro Thr Ser Ser Pro Ile Cys Ser Leu Ser Tyr Asp Glu Thr
```

```
5297            740              745            750
5299 Ala Thr Lys Arg Val Cys
5300            755
5303 <210> SEQ ID NO: 36
5304 <211> LENGTH: 762
5305 <212> TYPE: PRT                    p.37
5306 <213> ORGANISM: Musa acuminata
5308 <400> SEQUENCE: 36
5309 Leu Thr Gly Thr Gly Pro Pro Ser Arg Ser Thr Val Ser Ile Ser Phe
5310  1               5              10               15
5312 Asp Leu Phe Ser Gln Ser Leu Ser Leu Ser Leu Ser Leu Ser
5313             20              25              30
5315 Val Cys Leu Ile Trp Leu Cys Ile Ala Met Phe Ile Leu Ala Lys Leu
5316         35              40              45
5318 Cys Pro Ser Leu Ser Arg Ile Trp Arg Cys Ser Phe Tyr Lys His Cys
5319     50              55              60
5321 Arg Met Arg Ala Asn His Ile Gly Arg Pro Leu Gly His Asp Asp Met
5322 65              70              75              80
5324 Asp Ser Ser Thr Ala Ser Ser His Gly Met Asp Pro His Ser Ser Val
5325             85              90              95
5327 Asp Lys Gly Ser Pro Gln His Ala Val Val Val Pro Val Lys Ile Glu
5328             100             105             110
5330 Arg Ser Gly Asp Ser Asp Asp Arg Leu Phe Arg Ala Gln Arg Arg Pro
5331         115             120             125
5333 Ala Pro Ala Ile Ser Val Pro Tyr Arg Arg Val Gly Ile Asn Gly Phe
5334     130             135             140
5336 Val Val Ala Leu Phe Leu Ala Gly Ile Asn Lys Pro Cys Lys Leu Leu
5337 145             150             155             160
5339 Phe Leu Phe Pro Tyr Ile Lys Pro Ser Ser Cys Tyr Ile Lys Ile Ala
5342             165             170             175
5344 Cys Asp Ile Ser Val Trp Ile Arg Thr Asp Leu Ser Leu Lys Trp Val
5345         180             185             190
5347 Gly Phe Thr Leu Ser Ser Ser Ser Ser Ser Pro Trp Val Trp Ile Leu
5348         195             200             205
5350 Asp Arg Lys Pro His Leu Lys Ser Asn Pro Asn Ile Gly Leu Thr Cys
5351     210             215             220
5353 Ser Ile Ser Lys Lys Asn Thr Thr Arg Thr Thr Lys Ile Asp Ala His
5354 225             230             235             240
5356 Ile Asp Leu Val Thr Met Arg Glu Ser Trp Ile Lys Asn Ile Lys Ile
5357             245             250             255
5359 Lys Asn Lys Ser Ser Ser Thr His Ser Asn Asp Ser His Ser Ile His
5360             260             265             270
5362 Gln Ile His Arg Leu Leu Ile Asn Phe Ile Tyr Val Leu Lys Asn Leu
5363         275             280             285
5365 Ser Leu Gln Met Asn Lys Tyr Phe Phe Phe Val Arg Glu Gly Ser Asn
5366     290             295             300
5368 Ile Ile Tyr Ile Tyr Ile Tyr Ile Tyr Leu Leu Asp Ser Asn His Phe
5369 305             310             315             320
5371 Ser His Gln Asn Met Asn Arg Arg Pro Tyr Leu Gln Lys Pro Thr Asn
```

```
5372                    325              330                335
5374 Cys Ser Gln Thr Leu Ile Glu Leu Arg Ser Lys Leu Leu Leu Asn Phe
5375           340              345                350
5377 Arg Phe Pro Ile Lys Tyr Thr Arg Ile Phe Tyr Ser Asp Asp Ala Pro
5378           355              360                365
5380 Asp Asp Lys Met Glu Gly Cys Val Cys Gln Pro Pro Ala Ile Ser Val
5381     370              375              380
5383 Ala Gly Thr Arg Arg Arg Gln Gly Arg Glu Arg Thr Ile Pro Ser Leu
5384 385              390              395                400
5386 Leu Leu Pro His His Ala Arg Leu Arg Phe Pro Ile Arg Pro Ile Pro
5387           405              410                415
5389 Val Ala Cys Gly Leu His Arg Arg Thr Ser Lys Cys Pro Ser Pro Leu
5390           420              425                430
5392 Phe His Ser Phe Ser Leu Arg Val Glu Glu Arg Leu Ile Ser Thr Lys
5393           435              440                445
5395 Gln Ala Pro Phe Leu Ser Lys Asn Thr Pro His His Ser His Thr Thr
5396     450              455              460
5398 Ser Ser Ala Ser Ser Ser Leu Phe Ala Phe Leu Pro Arg Leu Thr Met
5399 465              470              475                480
5402 Ser Thr Cys Gly Asn Cys Asp Cys Val Asp Lys Ser Gln Cys Val Val
5403           485              490              495
5405 Ile Leu His Pro Ser Thr Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser
5406           500              505              510
5408 Asn Leu Ala Pro Phe Val Phe Asp Glu Ser Thr Leu Pro Thr Ser Leu
5409           515              520              525
5411 Val Lys Thr Gln Ser Phe Ile Arg Glu His Gln Gln Tyr Tyr Met Tyr
5412     530              535              540
```

E--> `5414 Met Xaa Lys Val Asn Val Gly Arg Thr Trp Phe Cys Leu Cys Arg Lys`

```
5415 545              550              555                560
5417 Lys Gly Asn Ser Tyr Gly Ile Asp Ile Val Glu Thr Glu Lys Arg Tyr
5418           565              570              575
5420 Leu Ala Ser Ser Pro Ser Ser Ser Arg Met Ile Lys Leu Ile Arg
5421           580              585              590
5423 Ile Thr Pro Tyr Tyr Leu Thr Cys Phe Phe Arg Ile Arg Phe Val Ser
5424     595              600              605
5426 Ser Ala Thr Ser Thr Arg Ser Leu Pro Gln Lys Leu Pro Ser Met Thr
5427     610              615              620
5429 Ala Ser Ala Ser Ala Ala Pro Pro Ala Pro Ala Pro Thr Ala Ser Val
5430 625              630              635                640
5432 Ala Thr Glu Lys His Leu Cys His Tyr His Ile Lys Val Cys Asn Ala
5433           645              650                655
5435 Lys Thr Lys Glu Gln Lys Lys Lys Arg Lys Lys Lys Val Trp Leu
5436           660              665              670
5438 Cys Thr Leu Ile Ile Arg Ala Gly Val Val Arg Trp Asp Asn Ala Val
5439           675              680              685
5441 Ser Ser Val Leu Ser Leu Ser Cys Val Thr Thr Leu Leu Ser Ile Leu
5442           690              695              700
5444 Val Asn Glu Ile Leu Leu Val Leu Ile Trp Leu Cys His Ser Tyr Met
5445 705              710              715                720
```

```
5447 Leu Leu Leu Leu Leu Leu Pro Leu Ser Pro Ile Asn Pro Lys Asp Arg
5448             725             730             735
5450 Leu His Cys Lys Ala Gln Leu Pro His Arg Tyr Ala Arg Ser Val Thr
5451             740             745             750
5453 Met Asn Glu Gln Gln Pro Asn Glu Ser Ala
5454             755             760
5617 <210> SEQ ID NO: 39
5618 <211> LENGTH: 597
5619 <212> TYPE: PRT
5620 <213> ORGANISM: Musa acuminata
5622 <400> SEQUENCE: 39
5623 Ser Leu Val Arg Gly Pro Pro Arg Gly Arg Arg Tyr Arg Ala Leu Ile
5624 1               5               10              15
5626 Ser Ser Leu Asn Leu Ser Leu Ser Leu Ser Leu Ser Leu Ser Leu Tyr
5627             20              25              30
5629 Phe Lys Tyr Gly Cys Asn Ala Glu Leu Leu Cys Leu Ser Trp Pro Asn
5630             35              40              45
5632 Cys Val His Leu Ala Asp Lys Ser Gly Asp Asn Val Leu Phe Thr Glu
5633             50              55              60
5635 Ser Thr Ala Gly Gly Pro Glu Ile Thr Ser Asp Ala His Trp Val Met
5636 65              70              75              80
5638 Met Ile Trp Thr Pro Pro Gln Arg Ala Ala Met Gly Cys Glu Ile His
5639             85              90              95
5642 Ala Ala Ile Arg Glu Ala Arg Asn Thr Arg Leu Leu Leu Phe Gln Arg
5643             100             105             110
5645 Ser Lys Gly Gln Ala Thr Val Thr Ile Asp Phe Phe Glu His Asp Asp
5646             115             120             125
5648 Asn Asp Asp Leu Leu Leu Gln Tyr Pro Ser Pro Thr Val Glu Trp Glu
5649             130             135             140
5651 Met Gly Leu Leu His Tyr Phe Ser Gln Glu Leu Ile Glu Ser Pro Ala
5652 145             150             155             160
5654 Asn Cys Cys Phe Ser Phe Leu Ile Leu Asn Leu Pro Pro Val Thr Leu
5655             165             170             175
5657 Lys Leu His Val Lys Thr Phe Leu Tyr Gly Ser Glu His Glu Ile Tyr
5658             180             185             190
5660 His Ser Asn Gly Asp Leu His Tyr His His His His Leu His Gly
5661             195             200             205
5663 Phe Gly Ser Asn Thr Glu Asn Leu Ile Asn Pro Thr Ile Leu Ala Leu
5664     210             215             220
5666 Ala Pro Ser Pro Arg Lys Ile Gln Gln Glu Gln Gln Lys Phe Arg Met
5667 225             230             235             240
5669 His Ile Glu Leu Ile Trp Ser Leu Glu Asn His Gly Leu Lys Ile Leu
5670             245             250             255
5672 Lys Lys Ile Asn His Asn His Leu Leu Thr Leu Thr Ile His Ile Leu
5673             260             265             270
5675 Ser Thr Lys Phe Asp Ile Gly Phe Leu Ile Ser Tyr Ile Arg Phe Lys
5676     275             280             285
5678 Ile Ser Pro Phe Asp Arg Ile Asn Ile Ser Phe Asn Ser Leu Gly Lys
5679     290             295             300
```

RAW SEQUENCE LISTING   DATE: 03/20/2003
PATENT APPLICATION: US/09/892,635   TIME: 11:22:24

Input Set : A:\pto.amc.txt
Output Set: N:\CRF4\03202003\I892635.raw

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5681 Asp Leu Ile Tyr Ile Tyr Ile Tyr Ile Phe Ile Tyr Ile Leu Thr Ile
5682 305               310               315               320
5684 Ser Leu Thr Arg Ile Ile Asp Gly His Ile Cys Lys Asn Pro Pro Ile
5685             325               330               335
5687 Val His Ser Lys Arg Ser Leu Asn Gly Arg Asn Tyr Phe Ile Ser Arg
5688             340               345               350
5690 Asp Phe Gln Asn Ile Leu Val Ser Phe Thr Val Met Met Leu Arg Met
5691         355               360               365
5693 Ile Arg Trp Lys Asp Ala Cys Val Ser Arg Leu Arg Ser Leu Trp Arg
5694     370               375               380
5696 Gly Arg Asp Glu Asp Lys Asp Val Ser Gly Arg Tyr Gln Val Phe Ser
5697 385               390               395               400
5699 Ser Pro Thr Thr His Val Ser Asp Ser Arg Tyr Gly Leu Ser Arg Trp
5702             405               410               415
5704 Arg Val Asp Cys Thr Asp Glu Arg Val Asn Ala His Pro Pro Ser Phe
5705             420               425               430
5707 Ile Leu Ser Leu Cys Val Cys Glu Arg Ser Ala Tyr Lys Ala Arg Asn
5708         435               440               445
5710 Lys Pro Leu Phe Ser Pro Arg Thr His His Thr Ile His Thr Leu His
5711     450               455               460
5713 Pro Leu Leu Leu Arg Ala Phe Ser Pro Ser Phe Leu Val Pro Cys Arg
5714 465               470               475               480
5716 Pro Ala Ala Thr Ala Thr Ala Leu Thr Arg Ala Ser Ala Cys Lys Ser
5717             485               490               495
5719 Ser Ser Ile Pro Pro Pro Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu
5720             500               505               510
5722 Thr Ser Pro Arg Leu Cys Leu Met Ser Arg Leu Phe Pro His Arg Ser
5723     515               520               525
5725 Ser Lys Leu Arg Ala Leu Leu Gly Asn Ile Ser Asn Thr Ile Cys Ile
5726     530               535               540
E--> 5728 Cys Xaa Arg Ser Thr Leu Ala Glu Glu Leu Gly Phe Ala Phe Ala Gly
5729 545               550               555               560
E--> 5731 Arg Xaa Glu Thr Ala Thr Val Ser Ile Leu Leu Xaa Pro Lys Xaa Gly
5732             565               570               575
E--> 5734 Thr Asp Xaa Leu Leu Leu Pro Pro Pro Arg Arg Xaa Ser Asn Leu Gly
5735             580               585               590
E--> 5737 Leu Xaa Leu Ile Thr
5738             595
5741 <210> SEQ ID NO: 40
5742 <211> LENGTH: 590
5743 <212> TYPE: PRT
5744 <213> ORGANISM: Musa acuminata
5746 <400> SEQUENCE: 40
5747 His Trp Tyr Gly Ala Pro Leu Glu Val Asp Gly Ile Asp Lys Leu Ser
5748 1               5                 10                15
5750 Leu Leu Ser Ile Ser Leu Ser Leu Ser Leu Ser Leu Ser Leu Cys Met
5751             20                25                30
5753 Ser Leu Asn Met Val Val Met Leu Asn Cys Tyr Val Tyr Leu Gly Gln
5754         35                40                45
```

```
5756 Thr Val Ser Ile Phe Glu Gln Ile Asn Leu Ala Ile Met Phe Phe Leu
5757     50                  55                  60
5759 Leu Lys Ala Leu Gln Asp Glu Gly Leu Lys Ser His Arg Thr Pro Thr
5762 65                  70                  75                  80
5764 Gly Ser Tyr Gly Leu Leu His Ser Glu Gln Pro Trp Asp Val Arg Ser
5765                 85                  90                  95
5767 Thr Gln Arg Arg Gly Lys Pro Ala Thr Leu Gly Cys Cys Cys Ser Ser
5768         100                 105                 110
5770 Lys Asp Arg Lys Val Arg Arg Gln Arg Ser Thr Phe Ser Ser Met Met
5771         115                 120                 125
5773 Thr Thr Thr Thr Cys Ser Cys Asn Ile Arg Pro Leu Pro Ser Gly Asn
5774     130                 135                 140
5776 Lys Trp Val Cys Ser Cys Thr Ile Ser Arg Arg Asn Leu Lys Ala Leu
5777 145                 150                 155                 160
5779 Gln Ile Ala Val Ser Leu Ser Leu Tyr Thr Phe Leu Leu Leu His Asn
5780                 165                 170                 175
5782 Cys Met Leu Arg His Phe Cys Met Asp Pro Asn Met Arg Ser Ile Ile
5783         180                 185                 190
5785 Glu Val Met Gly Arg Ile Tyr Ile Ile Ile Ile Ile Ile Ser Met
5786         195                 200                 205
5788 Gly Leu Asp Leu Ile Arg Pro Lys Thr Ser Phe Lys Ile Gln Pro Tyr
5789     210                 215                 220
5791 Trp Leu Asp Leu Leu His Leu Gln Glu Lys Tyr Asn Lys Asn Asn Lys
5792 225                 230                 235                 240
5794 Asn Leu Gly Cys Thr Leu Asn Phe Gly His Tyr Glu Arg Ile Asp Lys
5795                 245                 250                 255
5797 Tyr Asn Lys Lys Ile Ile Ile Ile Tyr Ser Leu Arg Phe Thr Phe Tyr
5798         260                 265                 270
5800 Pro Pro Asn Leu Thr Ser Ala Ser Asn Phe His Ile Leu Gly Ser Lys
5801     275                 280                 285
5803 Lys Ser Leu Pro Leu Thr Asp Glu Ile Phe Leu Leu Ile Arg Gly Arg
5804     290                 295                 300
5806 Ile Tyr Asn Ile Tyr Ile Tyr Ile Tyr Leu Phe Ile Arg Phe Pro Phe
5807 305                 310                 315                 320
5809 Leu Ser Pro Glu Tyr Glu Ser Thr Ala Ile Ser Ala Lys Thr His Gln
5810                 325                 330                 335
5812 Leu Phe Thr Val Asn Ala His Ile Lys Val Glu Ile Thr Phe Lys Phe
5813         340                 345                 350
5815 Leu Glu Ile Ser Asn Lys Ile Tyr Ser Tyr Leu Leu Gln Cys Ser Gly
5816     355                 360                 365
5818 Asp Gly Arg Met Arg Val Ser Ala Ala Cys Asp Leu Cys Gly Gly Asp
5819     370                 375                 380
5822 Glu Thr Lys Thr Arg Thr Ala Asp Asp Thr Lys Ser Ser Pro Pro Pro
5823 385                 390                 395                 400
5825 Pro Arg Thr Ser Gln Ile Pro Asp Thr Ala Tyr Pro Gly Gly Val Trp
5826         405                 410                 415
5828 Thr Ala Gln Thr Asn Glu Met Pro Ile Pro Pro Leu Ser Phe Phe Leu
5829     420                 425                 430
5831 Phe Ala Cys Val Arg Gly Ala Pro Ile Asn Lys His Glu Thr Ser Pro
```

```
5832            435                  440                  445
5834 Phe Ser Leu Gln Glu His Thr Thr Pro Phe Thr His Tyr Ile Leu Cys
5835        450                  455                  460
5837 Phe Phe Glu Pro Phe Arg Leu Pro Ser Ser Ser Asn His Val Asp Leu
5838 465                  470                  475                  480
5840 Arg Gln Leu Arg Leu Arg Gln Glu Pro Val Arg Val Ser His Pro Pro
5841                 485                  490                  495
5843 Ser Leu His Leu Phe Phe Phe Phe Phe Phe Phe Phe Phe Pro Arg Pro
5844             500                  505                  510
5846 Val Cys Val Val Asp Ser Ser His Ile Arg Ala Gln Asn Ser Glu Leu
5847         515                  520                  525
E--> 5849 Tyr Gly Thr Ser Ala Ile Leu Tyr Val Tyr Val Xaa Gly Gln Arg Trp
5850     530              535              540
E--> 5852 Leu Lys Asn Leu Val Leu Pro Leu Gln Glu Glu Xaa Lys Gln Leu Xaa
5853 545              550              555              560
E--> 5855 Tyr Xaa Tyr Cys Xaa Arg Lys Xaa Val Leu Ile Xaa Phe Phe Ser Leu
5856             565              570              575
E--> 5858 Leu Leu Val Xaa Asp Asp Gln Thr Asn Asp Tyr Xaa Leu Leu
5859         580              585              590
```

Same (handwritten annotation)

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6073 <210> SEQ ID NO: 45
6074 <211> LENGTH: 2160
6075 <212> TYPE: DNA
6076 <213> ORGANISM: Musa acuminata
6078 <220> FEATURE:
6079 <221> NAME/KEY: misc_feature
6080 <222> LOCATION: (511)
6081 <223> OTHER INFORMATION: Nucleotide 511 is "s" wherein "s" = c or g.
6083 <220> FEATURE:
6084 <221> NAME/KEY: misc_feature
6085 <222> LOCATION: (883)
6086 <223> OTHER INFORMATION: Nucleotide 883 is "n" wherein "n" = a, c, g, or t.
6088 <400> SEQUENCE: 45
6089 ggatcccaac ttttaggaat ggatcttaaa attttagtta taagttcaaa gttagaaaaa      60
6091 tctttaccaa gagctttgag tccattgatg acatccgtga aacggtgtac atgtctccga     120
6093 tggactcact tggtttcatt cggaaaagtt cgaaagagtg cataagaata ttgattttgg     180
6095 attctttcac tcggttggtg ccttcatgag tgacctcaag agtcctccaa atatcaaaag     240
6097 ccgaatcaca aattgaaatg tgattgaatt cattttgtc taatgcacaa aacagggcat      300
6099 tcatagcctt tgtgtttaaa gcaaaaacat tcttctccga ttcatcccat tcgctcatcg     360
6101 gaagagaaaa tttttgaaat ccattttcga caatagacca aagctcgaaa tccatgcatg     420
6103 gaaatgagga agatcctcat atgagttttc caatacatgt aattcgactc attaaacata     480
6105 ggtggatgtg taatgaaatg accctcatgc sctatctctc ttgggtatta aaccaaatat     540
6107 gagagtgagc cttgctctga taccaattgt taggatcaga gtggcactaa gagagggggg     600
6109 gagtgaatta gtgcagtgga ttaaaactta taagtttaaa aatgaattcg taaatacgag     660
6111 aagatttcgt tttaatagta acttgagtag atgaaaacca aaagttaaca gtagtgtaaa     720
6113 taacaatttc gggaaagtaa gaactcacac attcaaggaa cataccaatt taaagtggtt     780
6115 cggtcaaaat gacctacatc cacttgtgaa gccttcttcg aagaggctcc caacttccac     840
6117 tagcaaatca ctttgaaggg gaaggacaaa tacctctctt acnacctttt acaatggttc     900
6119 atactcttac aaattttcaa cgagaagaa ggaggtgaac atgcaagcaa ttgaaaacaa      960
6122 gacttgctaa agactttgct aaggcttttt ttctcaatct attgcttctc aaaagttgta    1020
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/892,635

DATE: 03/20/2003
TIME: 11:22:24

Input Set : A:\pto.amc.txt
Output Set: N:\CRF4\03202003\I892635.raw

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6124 ttctctgctg agaattgagg ggtatttata gaccccaaga ggatttaaat ttgggctcca   1080
6126 aatttcgaat gctcttgggt tcccgaggtt gccggtgcca ccgcctgtca gtgtttgaca   1140
6128 ctggacagtg tactagcggt gccaccgccg gacctctcgg gtgttgggcg gtgccaccgc   1200
6130 ctagactttt tcagctcact ggttggattc caaacttgac ccaaaccagt ccgaactcgg   1260
6132 gtccaattga cccgtaaccg gattatagga ttaaccctta atcctaaccc taattatatg   1320
6134 caaactacgc aactgaaaat atagtcctaa gcaagttttt aaccggcaaa cgtcgagtct   1380
6136 tcttccggcg atctttcggc agacttctga tatacctttg gatttcttct agcggactcc   1440
6138 tagtagggtc ccgatcttgt ggcgagttta gcgagtagcc gaaccttctc ggtgatctcc   1500
6140 gcaaaccgcc gatgatctct tcggcagact ttcgaaaact tcgacaagtc cccgatttct   1560
6142 tctcggttgg ttccgacagc atctctaacg aaacttcgga ctccttgaat gtccatcgaa   1620
6144 cttgactccg gtaggcttgc tttatatttt caggctatca tagttaatcc tacatactta   1680
6146 actcaataat atggattaga ttaattaacc catcaattga tttcatcatc aaaattcgac   1740
6148 attcaacaaa catccgtact caataaccca tcaggctata gttacgtgac tatctactgt   1800
6150 gatccgtacg tgaagttagc gagtcatgat ccaggtcgtg tcacttattg gccgaacacg   1860
6152 tatcccttat ccaaatccag tcttctcaac tcttctagcc tacccgtctc ttttttttatt   1920
6154 acttttgaaa gaattcaaat caaaacagat acaaataac acggtgagac actgtgacat   1980
6156 gctagtctct ggaaagcatt aattcgcgca tccacagacg tcgtcagctt catcacccac   2040
6158 tttttcctac ataccatgtc gcatggcttt gttgatgaca gaccaccaca agcttgcctt   2100
6160 tggttgtgcc taacagagag agagagagag acagaccgat agcctcctca ttcaccatgg   2160
```

E--> 6165 (- 101 -) delete

(VI)

Use of n and/or Xaa has been detected in the Sequence Listing.
Review the Sequence Listing to insure a corresponding
explanation is presented in the <220> to <223> fields of
each sequence using n or Xaa.

```
<210>  42
<211>  17
<212>  DNA
<213>  Artificial Sequence

<220>
<223>  Primer()  ← delete

<400>  42                                              17
gatcgccatg gtgaatg
```

The types of errors shown exist throughout
the Sequence Listing. Please check subsequent
sequences for similar errors.

Input Set : A:\pto.amc.txt
Output Set: N:\CRF4\03202003\I892635.raw

Use of n's or Xaa's(NEW RULES):

Use of n's and/or Xaa's have been detected in the Sequence Listing.
Use of <220> to <223> is MANDATORY if n's or Xaa's are present.
in <220> to <223> section, please explain location of n or Xaa, and which
residue n or Xaa represents.

Seq#:9; N Pos. 163,387,471
Seq#:22; N Pos. 82,601,628,640,655,692,725,774,793,806,813,854,867,870,876
Seq#:22; N Pos. 882,890,919,946,959,965,995,999,1002,1028,1043,1054,1075
Seq#:22; N Pos. 1093,1515,2166,2216,2265,2345,2533,2870,2917,3077,3337,3356
Seq#:22; N Pos. 3618,3627,3754,3810,3819,3884,3893,4494,4503,4524,4533,4568
Seq#:22; N Pos. 4574,4597,4654,4724,4741,4759,4852,5027,5253,5546,5565,5567
Seq#:22; N Pos. 5575,5578,5618,5619,5650,5669,5672,5677,5683,5694,5704,5708
Seq#:22; N Pos. 5732,5741,5754,5758,5772,5778,5780,5784,5788,5802,5804,5808
Seq#:22; N Pos. 5813,5820,5824,5832,5834,5836,5854,5858,5863,5872,5875,5889
Seq#:22; N Pos. 5915,5922,5950,5990,6006,6011,6344,6401,6416,6596,6600,6608
Seq#:22; N Pos. 6612,6712,6748,6753,6756,6762,6830,6844,6847,6863,6910,6965
Seq#:22; N Pos. 6968,7070,7116,7179,7291,7322,7325,7345,7351,7359,7387,7395
Seq#:23; N Pos. 82,601,628,640,655,692,725,774,793,806,813,854,867,870,876
Seq#:23; N Pos. 882,890,919,946,959,965,995,999,1002,1028,1043,1054,1075
Seq#:23; N Pos. 1093,1515,2166,2216,2265,2345,2533,2870,2917,3077,3337,3356
Seq#:23; N Pos. 3618,3627,3754,3810,3819,3884,3893,4494,4503,4524,4533,4568
Seq#:23; N Pos. 4574,4597,4654,4724,4741,4759,4852,5027,5253,5546,5565,5567
Seq#:23; N Pos. 5575,5578,5618,5619,5650,5669,5672,5677,5683,5694,5704,5708
Seq#:23; N Pos. 5732,5741,5754,5758,5772,5778,5780,5784,5788,5802,5804,5808
Seq#:23; N Pos. 5813,5820,5824,5832,5834,5836,5854,5858,5863,5872,5875,5889
Seq#:23; N Pos. 5915,5922,5950,5990,6006,6011,6344,6401,6416,6596,6600,6608
Seq#:23; N Pos. 6612,6712,6748,6753,6756,6762,6830,6844,6847,6863,6910,6965
Seq#:23; N Pos. 6968,7070,7116,7179,7291,7322,7325,7345,7351,7359,7387,7395
Seq#:24; Xaa Pos. 25,164,173,177,181,193,204,220,227,231,233,247,251,254
Seq#:24; Xaa Pos. 259,269,278,282,284,294,296,305,310,314,320,326,458,656
Seq#:24; Xaa Pos. 673,687,713,774,883,899,952,1038,1043,1163,1180,1183,1202
Seq#:24; Xaa Pos. 1204,1397,1400,1412,1414,1422,1441,1462,1468,1474,1504
Seq#:24; Xaa Pos. 1559,1729,1735,1736,1739,1740,1753,1764,1770,1771,1773
Seq#:24; Xaa Pos. 1775,1778,1782,1783,1791,1794,1800,1806,1807,1808,1810
Seq#:24; Xaa Pos. 1815,1818,1822,1825,1826,1832,1833,1835,1837,1838,1842
Seq#:24; Xaa Pos. 1851,1863,1876,1881,1883,1991,2009,2014,2071,2075,2109
Seq#:24; Xaa Pos. 2120,2121,2122,2124,2147,2151,2152,2157,2169,2187,2188
Seq#:24; Xaa Pos. 2221,2236,2257,2293,2303,2304,2310,2312,2323
Seq#:25; Xaa Pos. 27,160,169,173,190,200,216,222,227,229,243,247,248,250
Seq#:25; Xaa Pos. 252,255,273,278,280,290,291,292,301,306,459,654,669,685
Seq#:25; Xaa Pos. 710,767,878,893,944,1029,1104,1107,1162,1164,1182,1185
Seq#:25; Xaa Pos. 1372,1375,1379,1382,1393,1395,1417,1440,1445,1450,1475
Seq#:25; Xaa Pos. 1533,1666,1672,1673,1676,1690,1706,1707,1714,1719,1727
Seq#:25; Xaa Pos. 1730,1734,1740,1742,1743,1744,1750,1751,1752,1754,1756
Seq#:25; Xaa Pos. 1757,1760,1761,1769,1770,1773,1779,1788,1790,1799,1813
Seq#:25; Xaa Pos. 1818,1820,1930,1949,1954,2011,2012,2015,2016,2058,2060
Seq#:25; Xaa Pos. 2061,2063,2083,2087,2088,2092,2106,2122,2123,2156,2171
Seq#:25; Xaa Pos. 2191,2224,2235,2236,2247,2258

Input Set : **A:\pto.amc.txt**
Output Set: **N:\CRF4\03202003\I892635.raw**

```
Seq#:26; Xaa Pos. 23,196,205,209,214,226,254,260,264,267,284,285,287,289
Seq#:26; Xaa Pos. 301,309,313,315,327,328,345,352,358,494,697,713,728,813
Seq#:26; Xaa Pos. 939,991,1076,1081,1165,1167,1208,1226,1229,1250,1253,1442
Seq#:26; Xaa Pos. 1445,1452,1455,1465,1474,1492,1511,1517,1523,1549,1604
Seq#:26; Xaa Pos. 1676,1770,1777,1780,1781,1794,1795,1805,1812,1814,1816
Seq#:26; Xaa Pos. 1820,1823,1832,1835,1840,1841,1846,1847,1849,1850,1855
Seq#:26; Xaa Pos. 1857,1861,1862,1864,1865,1871,1872,1874,1877,1878,1883
Seq#:26; Xaa Pos. 1894,1903,1916,1922,1923,2034,2053,2058,2114,2118,2144
```

Input Set : **A:\pto.amc.txt**
Output Set: **N:\CRF4\03202003\I892635.raw**

L:13 M:270 C: Current Application Number differs, Replaced Application Number
L:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:357 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:9 after pos.:120
M:341 Repeated in SeqNo=9
L:1562 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22 after pos.:60
M:341 Repeated in SeqNo=22
L:1880 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:60
M:341 Repeated in SeqNo=23
L:2144 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:24
M:340 Repeated in SeqNo=24
L:2601 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:25
M:340 Repeated in SeqNo=25
L:3045 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:26
M:340 Repeated in SeqNo=26
L:3542 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:840
M:341 Repeated in SeqNo=27
L:3726 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28 after pos.:840
M:341 Repeated in SeqNo=28
L:4100 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:29
M:340 Repeated in SeqNo=29
L:4216 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:30
M:340 Repeated in SeqNo=30
L:4531 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:31
M:340 Repeated in SeqNo=31
L:4872 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:32 after pos.:1680
L:4966 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:33 after pos.:1680
L:5104 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:34
L:5255 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:35
L:5414 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:36
L:5528 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37 after pos.:1680
M:341 Repeated in SeqNo=37
L:5608 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:38 after pos.:1680
M:341 Repeated in SeqNo=38
L:5728 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:39
M:340 Repeated in SeqNo=39
L:5849 M:340 E: (46) "n" or "Xaa" used: Feature required, for SEQ ID#:40
M:340 Repeated in SeqNo=40
L:5973 M:283 W: Missing Blank Line separator, <220> field identifier
L:6026 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44 after pos.:840
L:6117 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:45 after pos.:840
L:6165 M:254 E: No. of Bases conflict, this line has no nucleotides.